

# COMMERCIAL FISHERIES REVIEW



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FISH and WILDLIFE SERVICE  
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# COMMERCIAL FISHERIES REVIEW



A review of developments and news of the fishery industries  
prepared in the BUREAU OF COMMERCIAL FISHERIES.

Joseph Pileggi, Editor  
H. M. Bearse, Assistant Editor

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# COMMERCIAL FISHERIES REVIEW

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## CONTROL OF IRON SULFIDE DISCOLORATION IN CANNED SHRIMP (*Xiphopeneus* sp.) - PART 1

By Mary H. Thompson\* and Melvin E. Waters\*\*

### ABSTRACT

The shrimp, seabob, has a short shelf life when canned, owing to discoloration of the can surface by iron sulfide. A study was made to determine whether a decrease in the pH of the can contents would prevent this discoloration. The pH was lowered in the experiments by the addition of either a lemon juice concentrate or a citric acid solution, the condition of the cans was noted after storage periods of varying lengths, and the data were interpreted in terms of efficiency of the additive and effectiveness of varying degrees of acidity in preventing the discoloration. Recommended canning techniques for seabob are discussed.

### INTRODUCTION

For many years attempts have been made to utilize certain species of shrimp, commonly known as seabob, *Xiphopeneus* sp., for canning purposes, only to find that regardless of the freshness of the shrimp at the time of canning, the canned product had an extremely short shelf life. These shrimp cause an iron sulfide discoloration or blackening of the exposed metal surfaces of the can, which gradually spreads over the entire surface and eventually causes the shrimp themselves to discolor (Gallagher not dated).

Seabobs are found in commercial quantity in shallow waters of the Gulf of Mexico. The term seabob originated in the French name for this species, "six baub," which referred to the six sharp points on the rostrum of this species. The shrimp are of small size (70 to 80 count in the raw headless state) and are characterized by a very long upturned rostrum and long antennae, with the two posterior walking legs elongated into antennae-like filaments (Guest 1956).

In the Louisiana Delta area seabobs have long been salted and sun-dried. At various times they have been used to prepare shrimp meal. The supply of these shrimp far exceeds the demand for them, and consequently attempts have been made

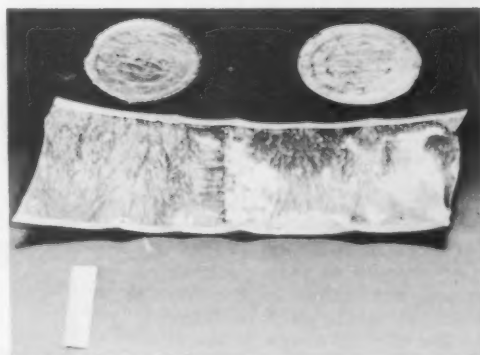


Fig. 1 - Severe iron sulfide discoloration present on can surfaces in control Lot No. 1 after a storage period of 360 simulated days.

\* Chemist  
\*\* Fishery Products Technologist

Technological Laboratory, Division of Industrial Research,  
U. S. Bureau of Commercial Fisheries, Pascagoula, Miss.

to process the seabobs in several types of cans when other shrimp are in short supply. However, the shelf life of the canned product has always been short, particularly at warm storage temperatures.

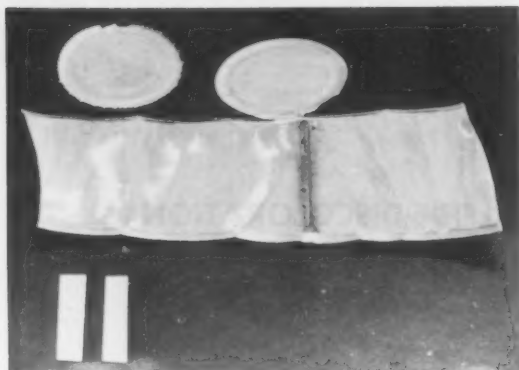


Fig. 2 - Absence of iron sulfide discoloration on can surfaces after a storage period of 360 simulated days.

The present series of experiments were initiated to determine if pH was the primary factor involved in the case of seabobs, and if so, what additives could be used to prevent such blackening. In general, this discussion should be considered as the first part of a series of experiments, and later reports will deal with the effect of other additives upon the discoloration and comparisons of the effectiveness of the additives in dealing with this problem. Because both citric acid and lemon juice concentrate have been suggested as additives to control this discoloration, it was decided to test their relative effectiveness in the first experiment of the series. The present series of tests were conducted at higher storage temperatures; however, further storage studies at normal temperatures are contemplated. A secondary aim was to suggest a possible time limit on the shelf life of such products. In the course of these experiments, a satisfactory method of processing these smaller shrimp was also developed.

The first portion of this paper deals with the initial experiments undertaken in an effort to find the proper amount of each additive to be used. Subsequently, the results of a larger-scale pack to determine the effectiveness of the two additives used, the increase in shelf life to be expected, and the effect of lowering the pH of the can contents is reported. Finally, the processing method developed for use with these smaller shrimp is outlined.

#### INITIAL EXPERIMENT

**PROCEDURE:** Processing Method: The following method was used in processing the shrimp in all of the experiments:

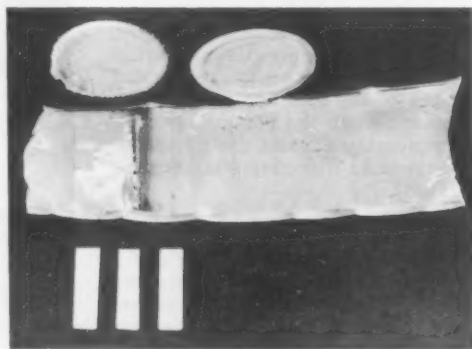


Fig. 3 - Iron sulfide discoloration present in slight amounts on can surfaces after a storage period of 360 simulated days.

1. The shrimp were peeled, blanched in boiling 8-percent salt solution for 2 to 3 minutes, drained, and packed with 5.25 ounces of meats to the can. Number 211 x 300 shrimp cans, coated with C-enamel of the type commonly used by the shrimp canning industry, were used throughout. This method produced a drained weight of 4.75 ounces or more.

2. The can was filled to  $\frac{1}{4}$ -inch headspace (80 to 85 ml. of solution) with brine or brine plus additives and sealed at a temperature of 150° F.

3. The cans and contents were processed for 12 minutes at 250° F. and 15 pounds pressure, and water-cooled before storage.

Scoring Method for Evaluating Discoloration: The scoring method used in estimating the amount of iron sulfide discoloration is as follows:

- (1) Score 0 - no iron sulfide discoloration
- (2) Score 0+ - very slight iron sulfide discoloration (area of deposit - 4 mm.<sup>2</sup> or less)
- (3) Score 1 - slight iron sulfide discoloration (area of deposit - 4 to 36 mm.<sup>2</sup>)
- (4) Score 2 - moderate iron sulfide discoloration (area of deposit 36 to 81 mm.<sup>2</sup>)
- (5) Score 3  $\frac{1}{2}$  - heavy iron sulfide discoloration (area of deposit, more than 81 mm.<sup>2</sup>)

Experimental Method: Preliminary experiments were conducted with two levels of lemon juice concentrate and two levels of citric acid in an effort to determine the most effective concentration of each in retarding the iron sulfide discoloration. The shrimp were received well-frozen and headless, were thawed and peeled by hand, and were processed according to the method previously described. In this preliminary experiment, salt tablets were used instead of brine to follow local commercial practice. The tablet was later discarded in favor of brine, which was easier to handle under the conditions of this study. The pack was divided into the following classifications depending upon the type of solution used to fill the container:

1. Control - 4.8 g. salt plus water
2. Type 1 - 4.8 g. salt plus 1 part lemon juice concentrate No. 309 to 50 parts water
3. Type 2 - 4.8 g. salt plus 1 part lemon juice concentrate No. 309 to 25 parts water
4. Type 3 - 4.8 g. salt plus 0.26 g. citric acid (equivalent to a 0.33-percent citric acid solution)
5. Type 4 - 4.8 g. salt plus 0.33 g. citric acid (equivalent to a 0.41-percent citric acid solution)

This canned lot was stored at a constant temperature of 37.5° C. (98.6° F.) for 70 days. High storage temperatures, such as were used in these experiments, intensify chemical reactions in the can. The higher temperatures used in this study were the only known deviation from the normal commercial canning procedure. There is a rule of thumb that the rate of chemical reactions approximately doubles for every 10° C. increase in temperature. Thus, the changes which occur during a given storage time are effectively doubled if the product is stored at 37.5° C. (99.5° F.) rather than at usual warehouse temperatures of 27.5° C. (81.5° F.) For example, a lot with a storage period of 70 days under forced conditions is approximately equal to one with a 140-day period under normal conditions. Since there has not been a study of the kinetics of this particular reaction in

relation to time and temperature, the figures used to indicate simulated storage days are only approximate ones based on the aforementioned rule of thumb. At the end of 140 and 280 simulated days the cans were opened, the amount of discoloration was noted, and the pH of the contents was determined with a pH meter.

**RESULTS:** Lemon juice in both concentrations was still effective at the end of 140 days and 280 days of simulated storage in retarding the discoloration. It appeared, however, that as discoloration was occasionally evident in the cans of 1:50 dilution, a slightly stronger concentration was needed, but one not as strong as the 1:25 dilution. At the same time, it appeared that neither the 0.26- nor the 0.33-gram concentrations of citric acid in the can were adequate to prevent discoloration. It was then decided to repeat the experiment on a larger scale, using a 1:40 dilution of lemon juice concentrate No. 309 and a concentration of 0.52 g. of citric acid per can.

#### PILOT-SCALE PACKING OF SHRIMP

**PROCEDURE:** It was necessary to process a large number of cans to determine the relative effectiveness of the proposed strengths of the two additives and to determine whether the relative acidity of the can contents, as indicated by the pH value, was a controlling factor in eliminating the discoloration.

One lot of seabobs was obtained from the Houma, La., area, where they had been peeled in an automatic shrimp peeler. They had been kept well-iced from capture until processing the following day, at which time the average pH of the raw shrimp was 7.5. The entire pack was divided into three smaller lots:

1. Lot No. 1 - Control, contained 80 to 85 ml. of 8.1 percent brine per can.
2. Lot No. 2 - Lemon juice, contained 80 to 85 ml. of 1 part lemon juice concentrate No. 309 to 40 parts of 8.1-percent brine per can.
3. Lot No. 3 - Citric acid, contained 80 to 85 ml. of 0.65-percent reagent-grade citric acid in 8.1-percent brine solution per can (0.52 g. of citric acid per can)

The cans were sealed, processed, and scored according to the general method outlined in the previous section. The 1:40 dilution of lemon juice concentrate No. 309 used, provides a concentration of citric acid in the can between 0.55 and 0.66 g. The pH of the 1:40 lemon juice solution was 2.8 and that of the citric acid solution was 2.7. Lots Nos. 1, 2, and 3 were stored at 47.5° C. (117.5° F.) for a 90-day period, which in effect was a simulated storage period of 360 days at normal temperatures. The day following that of processing, a can of each lot was cut, and a pH reading was taken to provide a base measurement. The pH of Lot No. 1 was 8.12; Lot No. 2, 6.42; and Lot No. 3, 6.40.

**RESULTS:** Since this was an experiment of a self-destructive nature in that when one can was cut it was lost as far as further storage studies were concerned, it seemed more valuable to simulate a storage period of approximately 1 year and to determine the condition of the cans and contents at the end of that time.

In order that an indication of the progress of the experiment could be provided, four cans from each lot were cut at the end of 220 simulated days. The results of this cutting are shown in table 1. The blackened condition of the cans in Lot No. 1, the control group, was marked, and the average pH was 7.57. The cans from Lot No. 2, 1:40 lemon juice, were not discolored and had an average pH of 5.96. Those cans from Lot No. 3, 0.65-percent citric acid, were slightly discolored and had an average pH of 6.42.

Table 1 - Condition and pH Values of Canned Shrimp Stored at 47.5° C. (117.5° F.)

Samples	220 Simulated Days					360 Simulated Days				
	No. Cans Opened	pH Range	pH Avg.	Score	Total No. Cans With Score Percent	No. Cans Opened	pH Range	pH Avg.	Score	Total No. Cans With Score Percent
Control: Shrimp meats, 8.1-percent brine . . . . .	4	7.50-7.60	7.57	3	100	47	7.29-7.52	7.37	3	100
Lemon Juice: Shrimp meats, 8.1-percent brine, 1:40 lemon juice concen- trate No. 309 . . . . .	4	5.80-6.12	5.96	0	100	22 6 15	5.62-6.24 6.11-6.21 6.10-6.30	6.01 6.18 6.19	0 0+ 1	51 14 35
Citric Acid: Shrimp meats, 8.1-percent brine, 0.65 per- cent citric acid . . . . .	4	6.35-6.50	6.42	1	100	7 16 16 3	6.18-6.59 6.19-6.51 6.15-6.51 6.60-6.69	6.41 6.35 6.38 6.63	0 0+ 1 2	17 38 38 7

At the end of 90 actual days, or 360 simulated days, the remainder of the cans in each of the lots were cut, the discoloration evaluated, and the pH measured. The results of this cutting are also shown in table 1. In control Lot No. 1, totaling 47 cans, all of the cans were heavily discolored. The pH ranged from 7.29 to 7.52 and averaged 7.37. In 68 percent of the cans this discoloration was so heavy that it permeated the shrimp meats.

In Lot No. 2 (1:40 lemon juice), totaling 43 cans, 51 percent of the cans showed no discoloration, 14 percent showed very slight discoloration, and 35 percent showed slight discoloration. The pH of those cans with no discoloration ranged from 5.62 to 6.24, average 6.01; those with very slight discoloration ranged from 6.11 to 6.21, average 6.18; and those with slight discoloration ranged from 6.10 to 6.30, average 6.19.

In Lot No. 3 (0.65-percent citric acid), totaling 42 cans, 17 percent of the total showed no discoloration, 38 percent of the cans were very slightly discolored, 38 percent were slightly discolored, and 7 percent were heavily discolored. The pH of those cans with no discoloration ranged from 6.18 to 6.59, average 6.41; those with very slight discoloration ranged from 6.19 to 6.51, average 6.35; those that were slightly discolored ranged from 6.15 to 6.51, average 6.38; and the heavily discolored cans ranged in pH from 6.60 to 6.69, average 6.63.

**DISCUSSION:** Discoloration was present on the can surface either in the headspace or beneath the surface of the contents. The blackening appeared first at those places where there was evidence of a break in the C-enamel. Kohman and Sanborn (1928) noted that in cans with enameled surfaces, the actions on the can surfaces are enormously concentrated at the point where the enamel has been pierced. As reactions take place in the can, the entire amount of tin plate is removed from this small surface area, allowing the sulfides present in the canned product to react with the exposed steel surface and produce the black iron sulfide discoloration. Since beginning discoloration surrounds a break in the enamel, it starts most often at the can seam or junction of the can lid and can body. As discoloration becomes more pronounced, the blackening extends under the enamel until it almost entirely covers the inside surface of the can. Since the cans were kept in one position throughout the entire storage period, it appeared that the discoloration could take place either in the headspace or on surfaces directly in contact with the can contents. This would indicate that the unwanted chemical reactions are taking place in the can's contents, as well as in the headspace of the can, contrary to previous experience with some other seafoods. The corrosion mechanism of tin plate is believed to be a function of the particular food product being dealt with, however, and results cannot always be extrapolated from one product to another (Frankenthal 1959).



The initial area of blackening of the cans in control Lot No. 1 was apparent, in some cases, the day after they were processed. These control cans were heavily discolored within a period of 360 simulated days as were those experimental, Lot No. 3, cans in which the pH exceeded 6.6. Thus it can be seen that the addition of the proper concentration of lemon juice or citric acid will prevent severe discoloration of the cans.

In comparison of Lot No. 2 and Lot No. 3, it can be seen that at the end of 360 simulated days, 51 percent of the cans of Lot No. 2 containing the 1:40 lemon juice were entirely free of discoloration, whereas only 17 percent of the cans containing the 0.65-percent citric acid were free of blackening. This appears to indicate that an added controlling effect was obtained by using lemon juice. It must be noted, however, that in none of the cans in either Lot No. 2 or Lot No. 3, except in the three cans in Lot No. 3 with a pH exceeding 6.6, was the blackening excessive.

It was apparent from the range of pH values in the cans with a 0, 0+, or 1 rating, whether containing lemon juice or citric acid, that there was a considerable overlap in the values. Therefore, a statistical analyses of variance, called the F test<sup>1/</sup>, was applied to the pH values regardless of the amount of discoloration and regardless of the additive. The F value did not exceed the 5-percent level of probability, and it was concluded that these groups did not differ significantly in their pH values. Although the pH of the can apparently should be lowered to less than 6.6 for effective control, once it falls below this point the degree of effectiveness of the additive is dependent upon other characteristics of that additive rather than the acidifying characteristic alone.

#### SUGGESTED PROCESSING METHOD

The processing procedure, employed in these experiments is commonly used in the Gulf of Mexico area to process other types of shrimp. The texture of the canned seabobs was firm, and no evidence of crumbling was observed in either Lot No. 2 or Lot No. 3. There was no evidence of spoilage, other than the iron sulfide discoloration present in some of the cans. This indicated that the processing time, temperature, and pressure were adequate. There appeared to be too much salt present, however, for maximum taste appeal. The cans in Lot No. 3 also appeared to have a slight aftertaste, which could have been due to the citric acid. For these reasons it was decided to pack a small number of cans with varying salt and citric acid concentrations and subject them to organoleptic analysis by a trained panel.

**PROCEDURE:** Cans were packed with salt concentrations varying from 0.0 to 4.9 g. per can and citric acid varying from 0.0 to 0.65 g. per can. The pack was processed as before, stored until the following day, and subjected to organoleptic evaluation.

**RESULTS:** Upon evaluation it was found that the optimum pack contained 3.6 g. of salt. At a concentration of citric acid greater than 0.52 grams per can an aftertaste not present in the cans containing 0.52 grams or less, was discerned by some members of the panel. This indicated that it was not practical to increase the amount of citric acid used in the previous experiment in order to attempt to attain the level of protection afforded by the lemon juice. A 1:40 concentration of lemon juice concentrate No. 309, as used in the previous experiment, did not appreciably affect the taste of the shrimp.

#### SUMMARY

1. A trial pack of shrimp (*Litopenaeus* sp.) was processed to determine the optimum level of lemon juice concentrate No. 309 or citric acid needed to prevent iron sulfide discoloration of the canned product.

<sup>1/</sup> A statistical test used to determine if differences between measurements may be considered as real.

2. Three large lots were processed: (a) a control lot using no additives; (b) a lot containing 80 to 85 ml. of 1:40 lemon juice concentrate No. 309 in brine per can; and (c) a lot containing 80 to 85 ml. of a 0.65-percent citric acid in brine per can (0.52 g. of citric acid per can). These were stored at 47.5° C. (117.5° F.) for 90 days (360 simulated days). At the end of this period the cans were cut, the discoloration evaluated, and the pH of the contents measured. The following conclusions were obtained from these data:

When the pH was adjusted to a value below 6.6, only slight discoloration of the cans occurred after a storage of 360 simulated days.

Fifty-one percent of the cans in the lot containing lemon juice were entirely free of blackening, whereas only 17 percent of the cans in the lot containing citric acid were free of discoloration. This disparity in percentage of cans free of discoloration would seem to indicate that some factor in addition to acidification of the can contents was active in reducing the iron sulfide discoloration.

In an evaluation of the pH of cans scoring 0, 0+, and 1, regardless of additive or score, no significant difference was found between the lemon-juice lot and the citric-acid lot, further indicating an additive effect obtained in using lemon juice. The only significant difference in pH values obtained was between the pH values of the cans graded 0, 0+, and 1 and those graded 3 (heavily discolored).

3. A third pack was processed to determine the optimum concentration of the ingredients. The trained organoleptic panel preferred the shrimp processed with 3.6-percent brine. It was felt that the organoleptically maximal concentration of citric acid was 0.52 g. per can. A concentration of 1:40 lemon juice concentrate No. 309 did not appreciably affect the taste of the shrimp.

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#### AUTOMATIC DEVICE PROTECTS DRIFT NETS FROM STORM DAMAGE

The Leningrad Designing Institute of the Fishing Fleet of the U. S. S. R. is stated to have devised an automatic installation for the protection of drift nets from breaking under the strain of a storm. When the length of the nets is more than 2 miles, the strains are enormous and the new device consists of a winding drum and an electric motor which so responds to tension that it automatically pays out more cable as the strain increases and takes in slack when the tension is lowered. (Australian Fisheries Newsletter, July 1958.)

## CONSTRUCTION AND OPERATION OF AN INEXPENSIVE FISH SMOKEHOUSE

By Melvin E. Waters\* and D. J. Bond\*\*

### ABSTRACT

An inexpensive fish smokehouse capable of producing 150 pounds (approximately 240 mullet) each cook has been constructed and operated, utilizing laboratory personnel. This smokehouse, consisting of a steel drum firebox and a 4-foot x 4-foot x 4-foot plywood smoker was built with 16 hours of unskilled labor using common hand tools. The materials purchased at retail on the local market cost \$45. The design permits fairly accurate control of smoke temperature.

### INTRODUCTION

Traditionally, the mullet industry of the Gulf and South Atlantic states has depended on the sale of fresh fish (Browner and A'brams 1956). In recent years, however, owing to consumer resistance to the sale of whole fresh fish, the mullet market has undergone a loss of volume in competition with other fishery products merchandised in a more convenient form.

Smoked mullet is considered a delicacy, but is not widely available. Promotion of this product could lead to utilization of a large volume.

Various kinds of apparatus are used to produce a smoked product from mullet. The product often varies in salt content, moisture, texture, and degree of smoke flavor. A project was undertaken at the Pascagoula Technological Laboratory, therefore, to build a fish smokehouse that could (1) be easily constructed by unskilled labor at minimum cost and (2) produce a uniform product having good taste acceptance.

### CONSTRUCTION

The smokehouse consists of two major parts: (1) a firebox and (2) a 4-foot x 4-foot x 4-foot plywood smoker. The separate units are necessary to prevent fire hazards and permit control of smoke temperatures.

Materials	Costs
	Dollars
3 sheets of $\frac{1}{2}$ " AC exterior plywood . . . . .	17.40
38 pcs. of 2" x 2" x 4' #2 lumber . . . . .	2.28
1 lb. of 3 penny galv. nails . . . . .	0.28
1 lb. of 8 penny finishing nails . . . . .	0.25
2 pr. brass butt hinges . . . . .	0.49
2 hooks and eyes . . . . .	0.12
2 qts. of wood sealer . . . . .	4.00
1 90° -6" galv. stovepipe ell . . . . .	0.94
8' of 6" galv. stovepipe . . . . .	4.00
4 cement blocks . . . . .	1.28
1 55-gallon oil drum . . . . .	6.00
16 sq. ft. of $\frac{1}{2}$ " mesh hardware cloth . . . . .	2.40
20 doz. eye hooks, small plated . . . . .	4.56
1 door handle . . . . .	0.55
20 doz. hooks (made from stainless steel wire) . . . . .	0.30
Total . . . . .	44.85

The firebox is constructed from a 55-gallon drum having a removable clamp-on lid (see fig. 1). A 8-inch x 10-inch door is cut near the bottom rim of the drum, using a cold chisel and hand hacksaw. The cutout piece is refitted as a door by attaching it with a pair of brass butt hinges.

On the opposite side of the drum and near the top, a hole 6 inches in diameter is made to fit in a piece of stovepipe. Furnace cement should be used to seal the cracks between the pipe and drum. Eight feet of six-inch galvanized stovepipe is attached at the top rear of the firebox and at the bottom center of the smoker. The simplest procedure is to set up

\* Fishery Products Technologist,  
\*\* Fishery Scientific Aide,

} Division of Industrial Research, U. S. Bureau of Commercial Fisheries,  
Pascagoula Technological Laboratory, Pascagoula, Miss.



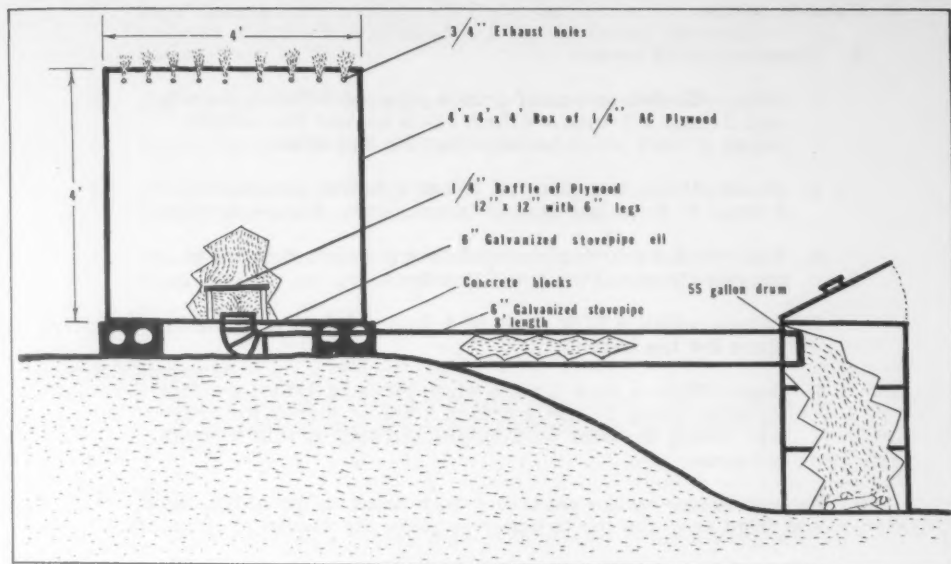


Fig. 1 - Side view of smokehouse and firebox.

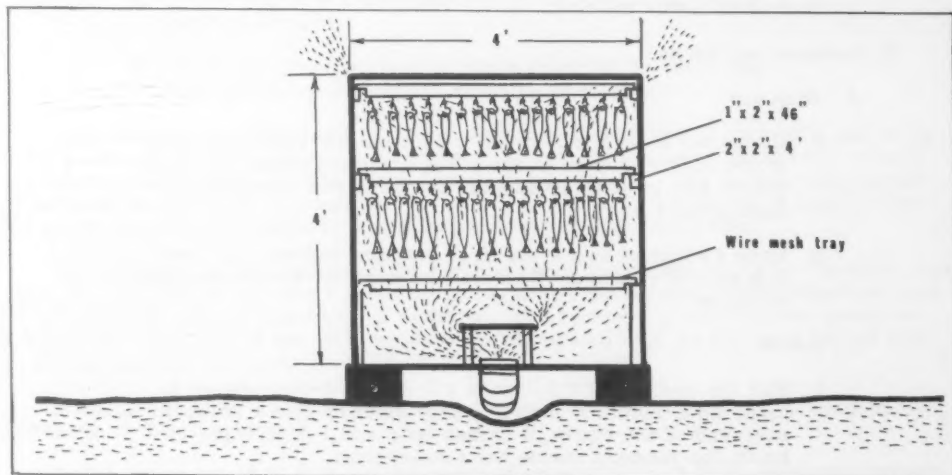


Fig. 2 - Open front view of smokehouse.

the smokehouse on a bank or steep slope with the firebox on the lower grade. Otherwise the smoker must be raised on blocks, or a blower used to gain circulation of the smoke.

The construction of the smokehouse involves the building of four sections: (I) outside section, (II) runners and racks, (III) baffle, and (IV) wire-mesh tray. Materials and costs are shown in table 1. Illustrations and dimensions are shown in figures 1 and 2. Directions for construction are as follows:

## I. Outside section

### A. Construction of panels

1. Sides--To two pieces of  $\frac{1}{4}$ -inch plywood 4-feet x 4-feet, nail 2-inch x 2-inch x 4-foot stock around the outside edges of each piece to construct the two sides.
  2. Back--Attach one piece of 4-foot x 4-foot plywood to the 2 sides to form the back of the smoker. Secure firmly.
  3. Top--Nail a fourth piece of 4-foot x 4-foot plywood to the two sides and back to form the top.
  4. Bottom--Nail a fifth piece of 4-foot x 4-foot plywood in place for the bottom.
  5. Door--Make a door from a sixth piece of 4-foot x 4-foot plywood, using 2-inch x 2-inch x 4-foot pieces for bracing. Swing the door on 3 hinges and lock it with 2 hooks and eyes.
- B. Exhaust holes--Make several  $\frac{3}{4}$ -inch holes in the sides, back, and front near the top in order to allow the smoke to circulate.
- C. Wood sealer--Apply two coats of wood sealer to the outside only to prevent warping of the plywood. Do not use sealers and paint inside the box.

## II. Runners and racks

### A. Runners

1. Using two 2-inch x 2-inch x 4-foot pieces, nail one piece to the inside of each of the sides 4 inches below the top. These will be used to support the first row of racks containing the fish.
2. Drop 12 inches below the first runners and nail in a second pair of runners. This will be used for the second row of racks.

### B. Racks

1. For the racks, split 8 2-inch x 2-inch x 4-foot pieces to make 16 1-inch x 2-inch x 4-foot pieces. Cut a notch on each end of the racks, 2 inches long and 1-inch high, to fit on the runners inside the smokehouse.
2. Screw small eye hooks into the lower edge of the racks 3 inches apart, using 15 hooks per rack. Make 2-inch "S" hooks from stainless steel wire for attaching the fish.
3. Place the racks on the runners 5 inches apart.

## III. The baffle

- A. Cut a hole 6 inches in diameter in the bottom of the smoke

box. Insert the stovepipe ell from the firebox in such a manner that the end protrudes 2 inches inside the smokehouse.

- B. Cut a piece of  $\frac{1}{4}$ -inch plywood 12-inches x 12 inches.
- C. Cut 4 2-inch x 2-inch x 6-inch pieces.
- D. At each corner of the plywood, nail a 2-inch x 2-inch x 6-inch piece to form a stand 6 inches high.
- E. Place the baffle over the stovepipe entry in order to disperse the smoke over the entire smokehouse. (See fig. 2.)

#### IV. Wire-mesh tray

##### A. Supports

1. Nail a 2-inch x 2-inch x 8-inch piece vertically in each of the bottom corners of the smokehouse to support the tray.

##### B. Tray

1. Nail 4 2-inch x 2-inch x 46-inch pieces to form a square tray.
2. Nail a 4-foot x 4-foot piece of  $\frac{1}{2}$ -inch mesh hardware cloth to the tray.
3. Place the finished tray in place in order to catch any fish that drop during the smoking operations.

This smoker was designed to smoke fish inexpensively and properly, yet to be durable enough to withstand months of use. Sixteen hours were necessary to build the smoker utilizing Scientific Aides from the laboratory. The same construction principles involved can be modified to construct a fish smokehouse of larger size, but prior experience should be gained by the use of this small one.

The distance of separation of the firebox from the smoker may be varied to secure best results in controlling the temperature of the smoke. This structure may be modified to control humidity, if desired. The removable racks make possible hanging and handling of the fish inside a screened building, as the rack full of fish is easily carried by hand.

Hinging one entire side as a door to the smokehouse permits easy hanging and changing of the filled racks.

In this area, storage in a refrigerator of smoked fish of high moisture content quite often results in surface mold on the fish after three to four weeks. The design of this smoker with detachable racks lessens handling and thus lowers mold-spore contamination.

The baffle placed over the end of the stovepipe helps to disperse the smoke more evenly. Smoke from the incoming pipe would otherwise move through a small area of fish and not touch the remaining portion. The  $\frac{3}{4}$ -inch exhaust holes around the upper edges of the smoker serve the same purpose in that they create a flow of smoke from all sides of the box and cause a draft from the firebox.

Fish are not only smoked as a means of preserving the meat, but also because of the pleasant taste contributed by the smoke. Therefore, smoked fish is subject to spoilage even under the most sanitary handling conditions. Molds and yeast are responsible for the spoilage in smoked fish and refrigeration must be used to extend the storage life.

#### THE SMOKING OPERATION

A total of 240 mullet of average size (weighing a total of 150 pounds) are scaled and cut into butterfly fillets with heads left intact. Brining is done in 10-percent salt (37.7 salometer reading) at room temperature for one hour. The mullet are drained long enough to be dry to the touch which produces a glossy pellicle that acts as a protective coating. After being drained, the mullet are hooked through the eye by the stainless steel "S" hooks and attached to the racks.

Fire is started in the firebox about one hour prior to hanging the fish. Charcoal briquets are used to start the fire and green or wet hardwood is added to provide the smoke. In the Pascagoula area, pecan wood, various oaks, hickory, and cherry are suitable.

With some species of fish, a low-temperature smoke is of utmost importance in producing a product with a moist texture and a good smoky flavor. High temperatures result in drying, toughness, and extreme loss of weight. On the other hand, fish such as mullet is best smoked at temperatures from 130° to 180° F. Twelve hours is required to properly smoke small mullet to a golden brown color.

Mullet prepared as indicated here were served to a taste panel of local citizens. The principal criticism was that the fish were of small size and had excessive bones. They nevertheless were well accepted.

#### SUMMARY

A fish smokehouse was constructed from \$45 worth of materials in 16 hours, utilizing unskilled labor.

Approximately 150 pounds (240 mullet) were smoked in one operation in this smokehouse, producing a product acceptable to a taste panel of local citizens.

The plans may be expanded to construct a larger smokehouse, but it is desirable first to gain experience with a smaller smokehouse such as this one.

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### BACTERIOLOGICAL QUALITY OF FISH AND RELATION TO PROCESSING VARIABLES

The bacteriological quality of the fish and its relation to processing variables is being studied by the Seattle Technological Laboratory of the U. S. Bureau of Commercial Fisheries. The intent is to determine the range of the bacterial counts and general bacterial loads of the fish, the equipment, and the finished product; and to determine the relationship between the individual factors and fish quality.

Techniques have been developed for determining the bacterial counts, and sampling is now in progress in the fish-filleting plants in Seattle. Bacteriological samples are taken from the raw material (Pacific cod) and from the various pieces of the processing equipment, as the fish progresses from the fishing boat through the filleting operation (icing, washing, conveying and filleting of the fish; and candling, packaging, and freezing of the fillets).



### REFRIGERATED SEA-WATER TANK DESIGNED FOR USE IN STUDIES ON HOLDING WHITING

A large refrigerated sea-water tank has been designed for use in studies on holding whiting at the Bureau's Technological Laboratory, Gloucester, Mass. The new tank will hold over 3,200 pounds of fish at a temperature of 30° F. It features a unique salt-water circulation system and close temperature control using mechanical refrigeration. The equipment will be used on semi-commercial scale tests to obtain more information of the value of this method for holding fish in the New England area.



### DEEPEST OCEAN DIVE

The U. S. Navy in January 1960 with its bathyscaphe, named the Trieste, has set a new world's record by diving to the bottom of the Marianas Trench, in the Pacific.

The new record, 37,800 feet, is remarkable because it revealed that the "world's deepest hole" (Marianas Trench) goes down considerably farther than estimated. Previous studies, based on soundings made by a Russian oceanographic ship in 1957, indicated that the depth of the Marianas Trench was only about 35,000 feet.

# TRENDS AND DEVELOPMENTS

## American Samoa

### MORE KOREAN TUNA FISHING VESSELS TO FISH FOR CANNERY:

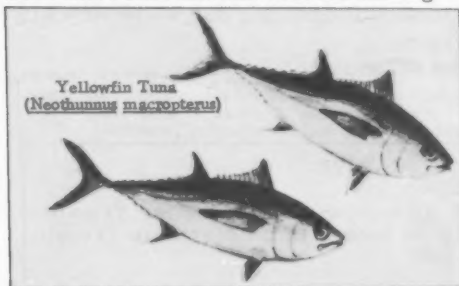
As a result of difficulties with Japanese crews while ashore in American Samoa, 10 additional Korean tuna fishing vessels are expected to fish for the American Samoa tuna cannery in 1960. One Korean tuna vessel began fishing for the cannery in June 1959 (reports from other sources state that first Korean vessel arrived early in 1958) and two more Korean vessels arrived later in the year. In contrast to the Japanese crews, the Koreans have a good reputation.

The American Samoan Government has decided to place two Samoan fishermen aboard each of the Korean vessels for training. (*The Suisan Keizai*, June 3, 1960.)

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### TUNA LANDINGS, MAY 1960:

In May 1960, tuna landings by Japanese and South Korean vessels fishing



for the tuna cannery in American Samoa totaled about 1.5 million pounds, or about 19.2 percent below the 1.8 million pounds landed in May 1959. However, the landings for January-May 1960 of 10.6 million pounds were 5.2 percent higher than

the 10.1 million pounds landed during the first five months of 1959.

American Samoa Tuna Landings, May 1960				
Species	May		Jan.-May	
	1960	1959	1960	1959
Albacore . . . . .	(1,000 Lbs.)			
Yellowfin . . . . .	1,295	1,268	8,997	7,545
Big-eyed . . . . .	109	420	1,232	2,055
Skipjack . . . . .	54	130	369	485
Total . . . . .	1,458	1,818	10,608	10,085

1/ Less than 500 pounds.

Note: Most of the tuna was landed by Japanese long-line vessels; a small amount was landed by a South Korean long-line vessel.



## California

### PELAGIC FISH POPULATION SURVEY CONTINUED:

**Airplane Spotting Flight 60-7-Pelagic Fish:** The inshore area from Punta Banda, Baja California, Mexico, to Fort Bragg, Calif., was surveyed from the air (April 11-15, 1960), by the California Department of Fish and Game Cessna "180" 3632C to determine the distribution and abundance of pelagic fish schools.

Although complete coverage was possible, strong winds hampered observations off central and northern California. No fish schools were seen north of Point Conception and only 131 were found in southern California and Mexico; 17 of the 131 schools were not identified.

Although 34 anchovy schools were observed there were no large concentrations; 17 of the 34 were scattered between Ensenada and the border, 5 were near Huntington Beach, 10 near Rocky Point in Santa Monica Bay, and 2 between Santa Barbara and Point Conception.

Sixty-one sardine schools were observed 1 mile off Laguna Beach and 19 Pacific mackerel schools were counted between Torrey Pines and La Jolla.

A large mass of extremely rich water was encountered between Halfmoon Bay and Davenport. It ranged in color from dirty brown to a soupy-appearing deep red, and the inner margin was 2 to 3 miles offshore. Its westerly extension was not determined. Low passes over the denser portions disclosed, in addition to the predominant dark red



and presumably microscopic organisms, many large jellyfish and small "swarms" of what were

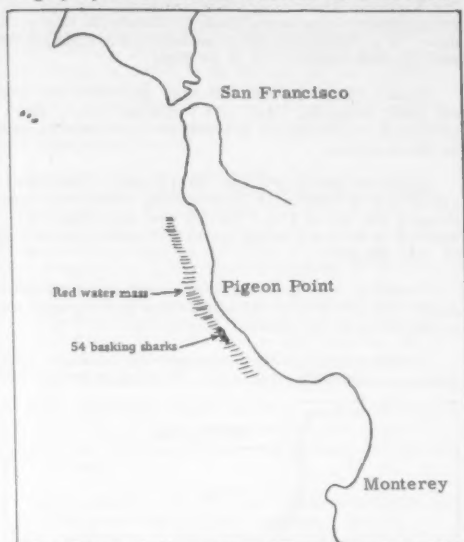


Fig. 1 - Airplane Spotting Flight 60-7 (April 11-15, 1960).

probably euphausiids. The line of demarcation between this water mass and the green to blue-green inshore water was very abrupt and many basking sharks were actively feeding along the "front." A total of 54 basking sharks was seen between Pigeon Point and Ano Nuevo Point.

Since the observers were able to cover only a small part of the water mass it can be assumed

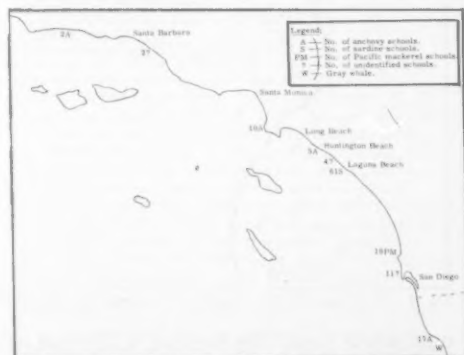


Fig. 2 - Airplane Spotting Flight 60-7 (April 11-15, 1960).

that many more basking sharks (and probably other forms) were feeding in the area.

Unlike surveys of the previous 2 months, only 1 gray whale was seen. It was near Punta Salispuedes, Baja California.

**Airplane Spotting Flight 60-11-Pelagic Fish:** The aerial survey to determine the distribution and abundance of pelagic fish schools was continued (May 16-20, 1960), by the Department's Cessna "180" 3632C along the inshore area from the California-Mexico border north to the Russian River.

Strong winds off central and northern California created unfavorable conditions for aerial observations, but weather and visibility were good south of Point Conception.

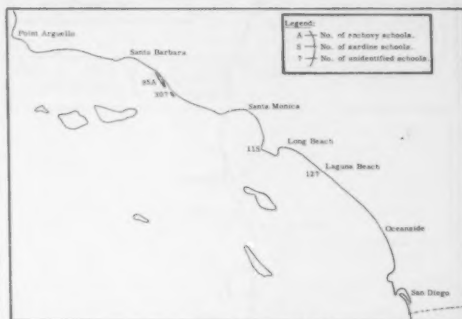


Fig. 1 - Airplane Spotting Flight 60-11 (May 16-20, 1960).

The only concentration of fish schools found during the survey was in the Ventura-Port Hueneme area. A group of 83 anchovy schools was seen close to shore between Ventura and Rincon Point, 12 more off Port Hueneme, and 30 deep unidentified schools between Point Mugu and Point Dume.

Only 23 other schools were seen during the flight. Of these, 11 observed were about 1 mile south of Point Vicente. The rest were off Laguna Beach and could not be identified.

Note: Also see *Commercial Fisheries Review*, July 1960 p. 21.

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## CRAB FISHING AREA AND INTENSITY STUDIES CONTINUED:

**Airplane Spotting Flight 60-8-Crab:** Commercial dungeness crab fishing areas from Pt. Arena to the California-Oregon border were surveyed from the air on April 18-19, 1960, by the Department's Cessna 182 to determine the fishing localities and the relative density of crab gear of the northern California crab fleet.

Conditions for observing the strings of crab gear were generally good throughout the 2-day survey.

A total of 177 lines of crab gear was counted, 155 (87.5 percent) north of Cape Mendocino and 22 (12.4 percent) south of the Cape but north of Pt. Arena. The 155 strings observed north of Cape Mendocino were 33 less than for the same area in March. Most of the gear was within 2 miles of the beach. Some gear was even in the breaker zone.

When compared with the March survey, several shifts in gear density are noted. This includes

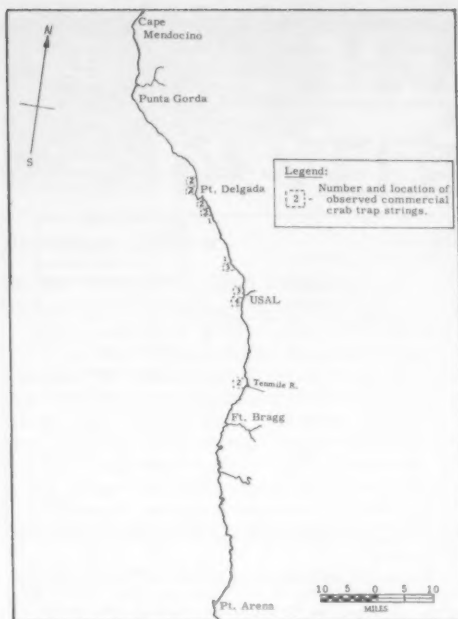


Fig. 1 - Airplane Spotting Flight 60-8-Crab (Apr. 18-19, 1960).

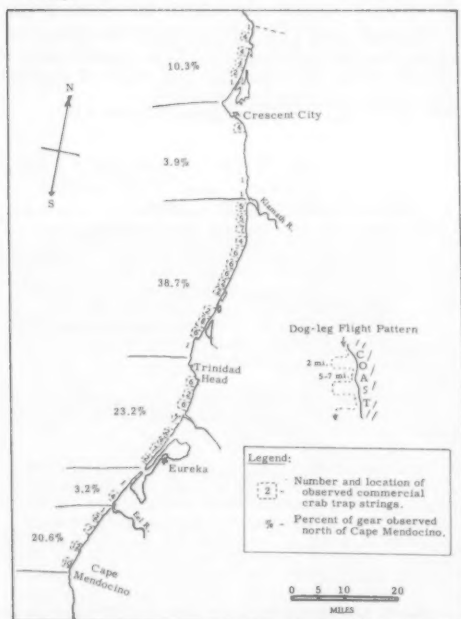


Fig. 2 - Airplane Spotting Flight 60-8-Crab (Apr. 18-19, 1960).

shifts from the area immediately south of Crescent City--down 11 percent--to the area south of the Klamath River--up 14 percent--and an apparent shift from the area south of Humboldt Bay--down 17 percent--to the area between Humboldt Bay and Trinidad Head--up 15 percent.

South of Cape Mendocino crab gear was observed off Point Delgado, Usal, and Tenmile River. No previous observations are available for comparison in these areas.

**Airplane Spotting Flight 60-10-Crab:** The survey of the commercial crab fishing area from the Oregon border to Punta Gorda was continued on May 16 to locate fishing areas and count the strings of crab traps.

Visibility was good, although a strong wind produced a heavy swell and white caps making observation difficult at times.

A total of 126 strings of traps was located. The greatest concentrations were off Crescent City and

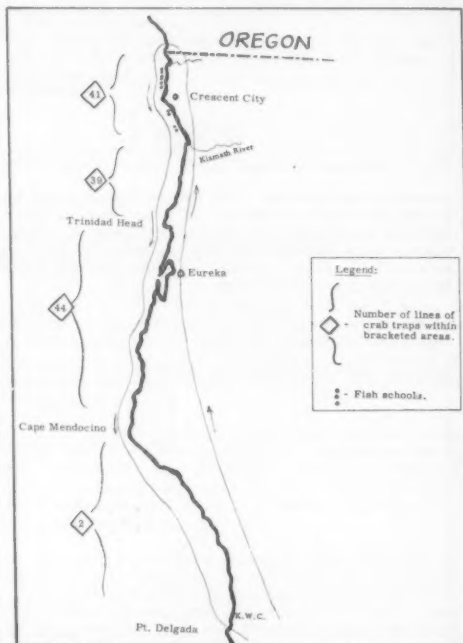


Fig. 1 - Airplane Spotting Flight 60-10-Crab (May 16, 1960).

the Klamath River. The majority of the traps was located close inshore, usually within one-fourth mile of the beach. A few strings were as far off as 2 miles.

Several dense schools of fish, on which birds and seals were feeding, were observed. It was not possible to determine the species but they had the appearance of anchovy schools.

Note: Also see *Commercial Fisheries Review*, June 1960 pp. 19-21.

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### AERIAL CENSUS OF COMMERCIAL AND SPORT FISHING FOR ABALONE CONTINUED:

Airplane Spotting Flight 60-9-Abalone: The shoreline from Princeton to Fort Bragg was surveyed (May 14, 1960) from the air by the California Department of Fish and Game Cessna 182 to locate areas of abalone sport fishing and to estimate the numbers of abalone fishermen, clam diggers, and skin divers.

Visibility was excellent although fog was encountered from Princeton to San Francisco. Due to strong winds, heavy swells and waves were prevalent along the entire coastline. In some areas skindivers, working offshore in rough water, were attached to a line held by friends on the shore. Not only were great numbers of people in the more commonly-known abalone areas but along the entire shoreline sportsmen, skindivers, and fishermen were seen in areas where they seldom, if ever, were previously observed. Many school classes were seen, as well as fishermen.

Although 3,720 people were counted on the shore and in the water, it is believed that this was a minimum count and that at least 20 percent additional were missed.

The northern end of Tomales Bay was again occupied by hundreds of clam diggers. Barges, skiffs, and other craft were observed ferrying sportsmen out to the mud flats.

The greatest numbers of abalone fishermen (690) were seen at Fort Ross, with the next greatest numbers (320) at Montara Beach in San Mateo County.

Note: Also see Commercial Fisheries Review, June 1960 p. 19.

\* \* \* \* \*

### SHRIMP STUDY OFF CALIFORNIA COAST CONTINUED:

M/V "N. B. Scofield" Cruise 60-S-2-Shrimp: Coastal waters off southern central and northern California were surveyed by the California Department of Fish and Game research vessel N. B. Scofield from April 5-May 3, 1960, to locate areas of concentrations of pink shrimp (*Pandalus jordani*). Other objectives were: (1) to determine size, sex, and weight of shrimp from different beds; (2) to make bathythermograph casts to obtain bottom temperatures in shrimp fishing areas; (3) to make plankton tows in an effort to obtain shrimp larvae from various depths; (4) to determine size and weight of incidental fish catches; and (5) to collect specimens requested by other investigations.

**EXPLORATORY OPERATIONS:** Strong north-west winds and high swells hampered operations throughout most of the cruise. A total of 69 tows was made with a 20-foot beam trawl having a net of  $1\frac{1}{4}$ -inch mesh.

Off Santa Monica, pink shrimp were found in 100 and 110 fathoms of water. The best of 3 tows in that locality produced 2 pounds in a half hour.

Off Gaviota, pink shrimp were caught in 2 of 3 tows. The most productive, in 110 fathoms, produced 8 pounds of shrimp in a half hour.

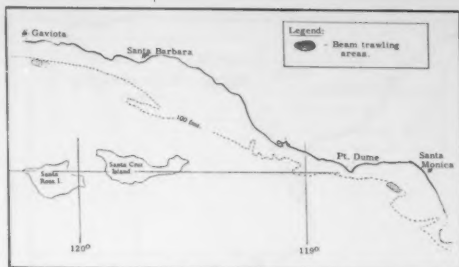


Fig. 1 - M/V N. B. Scofield Cruise 60-S-2-Shrimp (April 5-May 3, 1960).

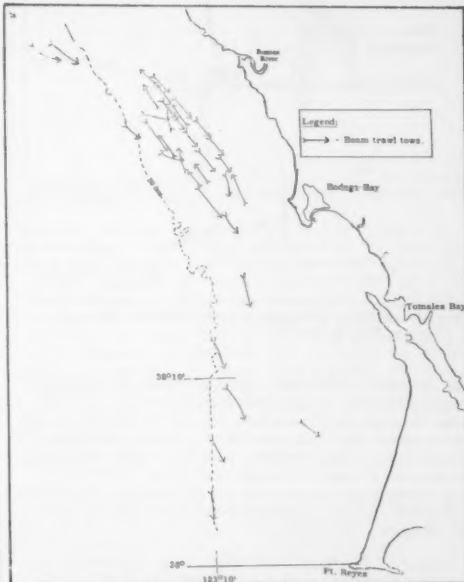


Fig. 2 - M/V N. B. Scofield Cruise 60-S-2-Shrimp (April 5-May 3, 1960).

A total of 23 tows was made in the Avila area. Shrimp could not be found in commercial concentrations, even though catches were made in 21 of the 23 tows. The best tows produced 82 pounds in 45 minutes at 105 fathoms off Pt. San Luis and 52 pounds in 30 minutes off Pt. Sal in 120 fathoms. An area approximately 20 miles in length was covered and trawling was conducted in depths of 80 to 130 fathoms.

In the Bodega area, shrimp were caught in 26 of 39 tows. A concentration of shrimp was found in commercial quantities off the Russian River in 40-47 fathoms. The area was approximately 7 miles long and 2 miles wide. Within this area 22 tows produced catches averaging 746 pounds per hour. Calculations based upon catch-per-hour, trawling area covered, and total area, gave an estimate of 880,000 pounds of shrimp inhabiting this area. Six tows from Salt Point to Ft. Ross in 58 to 52 fathoms of water yielded few shrimp.



Fig. 3 - M/V N. B. Scofield Cruise 60-S-2-Shrimp (April 5-May 3, 1960).

**SIZE, SEX, WEIGHT, AND COUNT OF SHRIMP:** Samples of shrimp were obtained from 3 tows off Santa Monica, 2 off Gaviota, 18 off Avila, and 23 off the mouth of the Russian River. Approximately 100 shrimp from each of these samples were sexed and measured. Heads-on count and weight determinations were made at sea except at Bodega Bay where samples from the commercial fleet were counted and weighed shoreside.

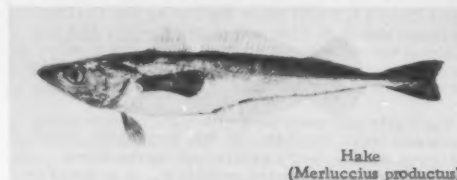
**TEMPERATURES:** Fifty-six bathythermograph casts were made in depths ranging from 38 to 130 fathoms. Casts were made in all areas where shrimp were caught and also in areas where shrimp were not taken.

Reversing thermometer casts were made in the center of the shrimp concentration off the Russian River. The temperatures were 7.9° C. (46.2° F.) on April 29 in 44 fathoms and 8.5° C. (47.3° F.) on May 1 in 40-44 fathoms. Vessel thermograph and surface temperatures were recorded during all tows for the entire cruise. These ranged from 8.4° C. (47.1° F.) off the mouth of the Russian River on April 24 to 15.2° C. (59.4° F.) off Santa Monica on April 5.

**PLANKTON TOWS:** A one-half-meter plankton net was secured to the beam trawl framework. Fifty plankton samples were thus obtained in conjunction with beam trawl tows. These samples are to be examined for shrimp larvae.

**INCIDENTAL FISH:** The catch of incidental fish was small because a small unweighted foot

rope was tied onto the beam from 6 to 12 inches above the runners. Counts and average weight of all species taken in 47 tows were recorded. In addition, all fish taken in 8 of the tows were measured.



Hake  
(*Merluccius productus*)

Hake (*Merluccius productus*), slender sole (*Lyopsetta exilis*), stripetail rockfish (*Sebastes saxicola*), and splitnose rockfish (*Sebastes diploproa*) were the major incidental fish in the catches in the Santa Monica, Gaviota, and Avila areas. Hake, rex sole (*Glyptocephalus zachirus*), and Pacific sanddabs (*Citharichthys sordidus*) were the principal fish species in the Bodega area catches.

Notes: Also see *Commercial Fisheries Review*, December 1959 p. 42.

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#### OPERATIONS IN 1960 OF WHALING LAND STATIONS:

As of June 1, licenses for 1960 baleen whaling were issued for two primary and two secondary land stations for processing whales and for 5 whale catcher vessels. These whaling operations, which are located in the San Francisco Bay area, are the only licensed operations in the United States, and are at the same level as in 1959. In 1959, 309 whales were taken for oil, animal food, and other byproducts.



#### Cans--Shipments for Fishery Products, January-April 1960

Total shipments of metal cans during January-April 1960 amounted to 32,874 short tons of steel (based on the amount of steel consumed in the manufacture of cans) as compared with 29,974 tons in the same period a year ago. Canning of fishery prod-



ucts in January-April this year was confined largely to tuna, Gulf oysters, and Pacific jack mackerel.

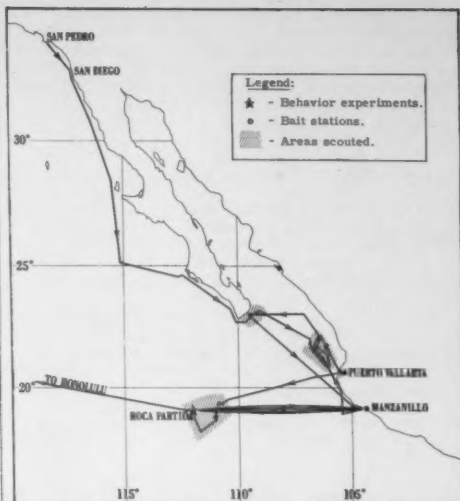
Note: Statistics cover all commercial and captive plants known to be producing metal cans. Reported in base boxes of steel consumed in the manufacture of cans, the data for fishery products are converted to tons of steel by using the factor: 23.0 base boxes of steel equal one short ton of steel.



## Central Pacific Fishery Investigations

### SKIPJACK TUNA BEHAVIOR STUDIES IN EASTERN PACIFIC:

M/V "Charles H. Gilbert" Cruise 47: The research vessel Charles H. Gilbert of the U. S. Bureau of Commercial Fisheries Biological Laboratory at Honolulu, returned to her home port after an absence of 27½ weeks. Departing from Honolulu on November 12, 1959, the Charles H. Gilbert proceeded to a shipyard in Oregon where a new bulbous bow with underwater observation ports was installed and extensive alterations were made to the berthing, bridge, and laboratory facilities. After a shakedown cruise from Portland, Oreg., to San Pedro, Calif., the vessel carried out (April 1-May 23, 1960) an oceanographic, biological, and fishery survey in Eastern Pacific waters off the west coast of Baja California, Cape San Lucas, and the Las Tres Marias and Revilla Gigedo Islands. Experiments designed to study the behavior of skipjack and yellowfin tuna and bait fishes were carried out. These experiments included underwater observations, primarily from the stern chamber in the Charles H. Gilbert, of the behavior pattern of fish in response to water sprays, to different species of bait, to "tinsel glitter" (a potential bait en-



M/V Charles H. Gilbert Cruise 47 (April 1-May 23, 1960).

hancer), to live and dead bait, and to rates of chumming. Preliminary analyses of the resulting data indicate that the tuna did not exhibit any difference in behavior whether sprays were on or off. They did exhibit different responses to different baits, with the most pronounced excitation resulting from the most elusive bait, thread herring. As to the behavior of the bait, the northern anchovy sounded immediately and, upon sighting the tuna, reversed direction and headed to the surface. Two other species of anchovy (both unidentified) assembled into schools and moved away from the vessel. The thread herring sounded, but unlike the northern anchovy, they exhibited considerable evasive action



The Service's research vessel Charles H. Gilbert.

as they sounded, luring the tuna away from the surface and the vessel. The tuna showed no response to the glitter. Although their movements slowed considerably when chummed with dead bait, they were observed to feed on the dead bait. The only obvious change in tuna feeding behavior with changes in rate of chumming was a decrease in activity with slower chumming rates.

Other objectives of the cruise were as follows:

- (1) Determine the temperature structure of the water over sea mounts and banks. Bathythermograph sections over two banks in the Revilla Gigedos were obtained before equipment failure forced a discontinuance.
- (2) Locate the California Current Extension or parts thereof between the west coast and Hawaii by surface salinity and temperature measurements and BT's. Bathythermographs and water samples for phosphate, nitrate, and salinity determinations were taken at 0000, 0600, 1200, and 1800 hours GMT from Revilla Gigedos to Hawaii.
- (3) Tag and release skipjack. Forty-six skipjack were tagged off the Island of Roca Partida. One tagged skipjack was recovered seven days after being tagged.
- (4) Transport collection of live fish and personnel of Hawaii State Division of Fish and Game from Mexico to Hawaii. A total of 3,800 snappers, *Lutianus* sp., were transported from Manzanillo with 89 percent survival.

Fishing was poor. Only six schools of tuna were sighted beyond the immediate vicinity of Roca Partida. None of these responded to live-bait chumming. Fishing incidental to the behavior experiments produced 545 skipjack, 678 yellowfin, and 30 little tuna.

Notes Also see *Commercial Fisheries Review*, January 1960 p. 30, and June p. 25.



## Dams

### FISH AND WILDLIFE BUREAUS RELEASE REPORT ON PROPOSED BRUCES EDDY DAM AND RESERVOIR IN IDAHO:

A report evaluating the probable effects of construction of the proposed Bruce Eddy Dam and Reservoir project in Idaho on fish and wildlife resources and recommending conservation measures in event the dam is authorized by Congress was released on July 7, 1960, by the Fish and Wildlife Service of the Department of the Interior.

The report, issued after a four-year study, was signed by D. L. McKernan,

Director of the Bureau of Commercial Fisheries, and by A. V. Tunison, Acting Director of the Bureau of Sport Fisheries and Wildlife. The document was addressed to Arnie J. Suomela, Commissioner of Fish and Wildlife of the Department of the Interior. The study was made with the cooperation of the Idaho Department of Fish and Game.

The effect of the project on big-game herds in the North Fork drainage would be highly adverse, according to the report. The Clearwater elk herd is one of the largest in the United States.

The report states the project also would damage both resident and migra-



tory fishes. The most damaging effects would be to the steelhead trout, 80 percent of which spawn above the Bruce Eddy Dam site. If the project were to be constructed there is no assurance that the runs of migratory fish could be maintained at even present low levels.

If the project is authorized, the two Bureaus recommend that conservation and development of fish and wildlife resources should be included as an authorized project purpose and that the following measures be taken:

- (1) Fish passage facilities at Bruce Eddy Dam be undertaken at an estimated cost of \$15 million.
- (2) Facilities for artificial propagation of anadromous fish be included at an estimated cost of \$2 million for construction and \$200,000 a year for operation.
- (3) Facilities be provided for the annual production of 500,000 catchable-size trout for stocking the reservoir and its tributaries at an estimated construction cost of \$600,000 with an annual operating cost of \$90,000.
- (4) A flow of not less than 2,000 second-feet of water in the North Fork of the Clearwater be made below the dam at all times and the temperature of the water is to be maintained between 45 degrees and 65 degrees Fahrenheit.

(5) Stream improvement work above the reservoir at a cost of \$1 million to be carried out with outlet structures in the dam so designed and located that downstream migrating fish will not be drawn into them.

(6) Lands additional to project needs be acquired and made available for management and habitat improvement for big game, especially elk, at an estimated cost of \$1,900,000 for acquisition of the necessary land and initial development.

There were also recommendations which would assure the public the fullest possible use of the area, provide for consultation and cooperation in minimizing the adverse effect of transporting logs downstream, and assure cooperation between the Forest Service, the Fish and Wildlife Service, and the Idaho Department of Fish and Game in the management of the acquired lands.



## Federal Aid Funds for

### Sport Fish and Wildlife Restoration

State fish and wildlife restoration projects received an apportionment of \$12,800,000 in Federal aid, with funds made available July 1, 1960, the Secretary of the Interior Fred A. Seaton announced. The balance of Federal Aid fish and wildlife restoration program funds for the year ending June 30, 1961, will be apportioned at the usual time in the fall.

The early apportionment is designed to help states program their Federal Aid activities more advantageously. It will be of special importance to those states operating on a revolving-fund basis.

Under the Federal Aid fish and wildlife restoration programs, states expend their own funds on approved projects and are then reimbursed up to 75 percent of the cost. On July 1, 1959, 14 states had exhausted their Federal Aid money available for obligation for fish-restoration programs and 16 states were without Federal Aid funds for obligation on wildlife restoration activities. Several other states had less than \$5,000 in Federal Aid funds available for obligation. The partial apportionment will make it possible for states to immediately claim reimbursement after July 1, 1960, for expenditures made in connection with

projects approved for the year ending July 1, 1961.

Federal Aid funds are derived from an excise tax on sporting guns and ammunition and on sporting rods, reels, creels, and artificial lures. Distribution is made on a formula based upon the number of license holders in a state and on its area.

The two Federal Aid Acts are administered by the Bureau of Sport Fisheries and Wildlife, U. S. Fish and Wildlife Service.



Of the partial apportionment of \$12,800,000, a total of \$10,300,000 is for the restoration of wildlife and \$2,500,000 for the restoration of fish. No indication was given relative to the probable total apportionment, but in recent years wildlife restoration funds have been between \$12 and \$13 million exclusive of a \$2,693,000 backlog which no longer exists) and fish restoration funds have been something in excess of \$5 million.



## Florida

### MIAMI UNIVERSITY RECEIVES GRANTS FOR FISHERY AND OCEANOGRAPHIC STUDIES:

The Physical Science Division of the Marine Laboratory of the University of Miami is in receipt of several grants from the National Science Foundation. The first for \$18,600 was given in order to study the feasibility of the use of the catamaran, or twin-hull, principle for an oceanographic research vessel.

"It has been clear for a long time that the conventional type of boat construction does not correspond to the needs of oceanographic research vessels," says the head of the Physical Science Division. "For oceanographic research the scientists need a platform from which they can work with as little interference as possible from the boat movement and the weather conditions prevailing on the sea. They want to have as many laboratories



as possible and a rather large free deck area. The vessel should have a rather high speed but still be able to reduce its speed below a knot. The deck officer in charge should be able to watch all operations and be able to maneuver the vessel quickly in such a way that sudden changes in speed and position of the vessel can be achieved. The classical concept of ship construction does not take care of these requirements in the most economical way. Ships are getting too large and expensive to build before the requirements are fulfilled."

The catamaran principle would automatically enlarge the deck area by the increase of the beam. Furthermore it gives a center well between the two hulls which can be used for nearly all observations and would allow handling of deep-sea gears in a shielded position. As the beam of each of the two hulls can be kept rather small, an economical high speed is easily achieved. The twin-hull construction provides for a more stable platform. The over-all length could be about 120 to 150 feet as compared with 250 feet for the conventional type vessel. Naval architects have not yet studied the structural design of large catamarans. Consequently, in order to be able to build a larger vessel based on this principle, structural studies and model experiments have to be carried out.

Such a vessel should be designed to carry a 16-man ship's crew, a 15-man scientific crew, should be 120 feet long with a 50-foot beam, have a top speed of 15 knots and the possibility to reduce the speed to one-tenth of a knot, three center wells for easy handling of all gears between the hulls, three articulated booms for handling of all gears on deck and over the side of the ship, and eight laboratories.

Naval architects Friede and Goldman, Inc., have been subcontracted for carrying out the feasibility study. They will work in close cooperation with Marine Laboratory scientists to assure the most functional design of the vessel.

A second grant for \$28,000 is to cover the expenses of the operation of The Marine Laboratory research vessel Gerda.

This grant will be used for geophysical studies, for development of instruments where boat time is required, for studies in Florida Bay, Straits of Florida, and the Bahamas.

A third grant for \$64,000, for a period of two years, is for the establishment of a Carbon-14 laboratory. Facilities are being built for the dating of Late Pleistocene events by the radiocarbon method. The Marine Laboratory intends to apply this method to a program of dating deep-sea as well as near-shore sediments.

The several objectives of this program include the establishment of accurate assays of the geochemical balance in the oceans, and the dating of major climatic, oceanographic, and geological events. In particular, the techniques will be used to assess the various rate changes accompanying the changing physical-chemical conditions of the sedimentary environments.

A grant for \$14,600 is for basic research on coral reef fishes. This work will be carried out on the reefs around St. John Island in the Virgin Islands. It is a continuation of work already started there November 1958.

Photographs and descriptions of each species studied will be prepared, along with data on habitat, food habits, growth, spawning, et cetera.



## Fur Seals

### PELAGIC SEALING STUDIES OFF ALASKA:

The vessel Windward under charter to the U. S. Bureau of Commercial Fisheries left Seattle, Wash., on April 18 for the Sitka area to continue the International North Pacific Fur Seal Commission's high-seas research program.

Few seals were found in West Crows Inlet, Silver Bay, or Sitka Sound, and the vessel went on to the Gulf of Alaska. Near Kodiak, fur seals began to appear in appreciable numbers about April 18. The chartered vessel Tacoma observed 796, mostly about 30 miles off Cape Barabaras on Kodiak, and collected 242 from

April 18 to 30. The seal concentration, which was accompanied by a great num-



ber of seabirds (shearwaters), Steller sea lions, and an estimated 30 to 40 humpback whales, was feeding on capelin, sand launces, and some small herring. As previously observed in the Gulf of Alaska, early-arriving seals were predominately adult females. About 430 seals have been collected since the start of pelagic operations. With two vessels, a quota of 1,250 is planned. If as hoped, a substantial part of these can be taken in the Gulf of Alaska by mid-June, the vessel remaining on charter (*Windward*) will be free to carry out more exploratory work in the Bering Sea than has been possible before.



## Great Lakes Fisheries

### Exploration and Gear Research

#### SEASONAL DISTRIBUTION OF COMMERCIAL FISH STOCKS IN LAKE ERIE:

**M/V "Active" Cruise 9:** The first in a series of cruises scheduled for Lake Erie during 1960 was conducted (May 18-28, 1960), by the U. S. Bureau of Commercial Fisheries fishing vessel *Active*. Objectives of the cruise were to obtain additional information on the seasonal distribution of fish stocks and to provide gear demonstrations for commercial fishermen from ports within the area of operation.

Systematic echo-sounding operations were carried out in United States waters between Sandusky and Avon Point, Ohio.

During the 10-day cruise, 15 exploratory trawl drags were completed in the 3- to 10-fathom depth



M/V *Active* Cruise 9 (May 18-28, 1960).

range using a 50-foot two-seam balloon trawl equipped with a 1½-inch mesh cod end.

Catches of up to 200 pounds of smelt were made per drag over the entire area. The majority of the smelt in this area was 16 to 20 to the pound. Several drags made north of Lorain, Ohio, produced catches of smelt, 9 to 10 to the pound. Commercial quantities of yellow perch were taken in trawling operations completed off Lorain, Ohio.

Thermal stratification was recorded from near Kelleys Island eastward throughout the cruise area. Surface water temperatures recorded during the cruise ranged from 57°-60° F. Bottom water temperatures ranged from 59° F. at 3 fathoms to 45.7° F. at 10 fathoms.

The *Active* was scheduled to depart Vermilion, Ohio, about June 6 on the second 10-day exploratory fishing and gear research cruise. Area of operations were to be from Avon Point, Ohio, to Erie, Pa.

Note: Also see *Commercial Fisheries Review*, July 1960 p. 28.

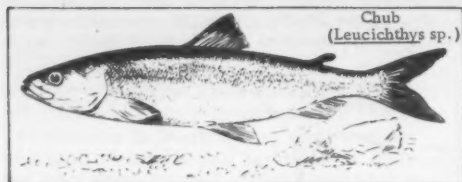


## Great Lakes Fishery Investigations

### LAKE MICHIGAN FISH POPULATION SURVEY:

**M/V "Cisco" Cruise 1:** The 1960 program to estimate the status of the chub (*Leucichthys* sp.) population of southern Lake Michigan was initiated April 26-May 10, 1960, by the U. S. Bureau of Commercial Fisheries research vessel *Cisco*. Throughout the season trawls and gill nets of standard design will be fished intensively at selected locations to measure the species composition, distribution and abundance of chubs and associated species.

The *Cisco* began trawling operations with a 52-foot, two-seam balloon trawl, similar to those presently used by commercial trawlers in Lake Michi-



gan. One or more tows were made at each 5-fathom interval from 15 to 40 fathoms off Grand Haven, Mich. Chub catches ranged from 41 to 342 pounds per 30-minute tow. More than 99 percent of the chubs taken in the trawls were bloaters (*Leucichthys hoyi*). The chubs averaged about 9 to the pound; only about 5 percent were over 9 inches long. Also in the catches were small numbers of lake herring, alewives, smelt, trout-perch, slimy sculpins, deep-water sculpins, spottail shiners, and emerald shiners.

Linen gill nets were set for 4 nights at 25 and 50 fathoms off Grand Haven. These nets, made up of equal amounts of  $2\frac{1}{2}$ -,  $2\frac{1}{2}$ -,  $2\frac{1}{2}$ -,  $2\frac{1}{2}$ -, and 3-inch mesh, extension measure, are the identical ones which were set in southern Lake Michigan in 1954. The catch in the 25-fathom set was light (129 chubs, 3 lake herring, 2 alewives, 2 smelt in 1,275 feet of net), but the net was so badly fouled with weeds that it undoubtedly did not fish effectively. Bloaters made up 93 percent of the identified chubs; the remainder were *L. alpenae*, except for 1 *L. zenithicus* and 1 *L. reighardi*. At 50 fathoms 279 chubs and 5 alewives were taken in 2,550 feet of net. Here bloaters constituted 94 percent of the chub catch, *L. reighardi* 4 percent, and *L. alpenae* and *L. kiyi* 1 percent each. Some of the *L. reighardi* were freshly spent.

Nylon gill nets (50 feet each  $1\frac{1}{2}$ - and  $1\frac{1}{2}$ -, and 300 feet each 2-,  $2\frac{1}{2}$ -,  $2\frac{1}{2}$ -,  $2\frac{1}{2}$ -, 3-,  $3\frac{1}{2}$ -, and 4-inch mesh), set for one night at 50 fathoms in the same area as the linen nets, caught 142 chubs, 60 of them in the  $1\frac{1}{2}$ - and  $1\frac{1}{2}$ -inch meshes. All chubs were bloaters except for 2 *L. kiyi* and 1 *L. reighardi*.

In order to study the differences in catches of gill nets set for various lengths of time, several identical gangs of nylon nets (same mesh composition as the gang at 50 fathoms) were set at 25 fathoms off Grand Haven. Three sets were for 1 night, 2 for 2 nights, 1 for 3 nights, and 1 for 5 nights. No thorough analysis of the differences in catches has been made, but an obvious conclusion that may be drawn is that chub catches may vary widely from night to night. On successive nights the one-night sets took 361, 637, and 384 chubs, respectively. The 2-night sets made numerically similar catches of 801 and 843 chubs, respectively, but the size composition of the fish was appreciably different in the 2 sets.

A hydrographic station was established at 25 fathoms off Grand Haven. Collections, which will be standard for all stations during 1960, included bottom fauna, net plankton, nannoplankton, and water for chemical analysis. Water temperatures in southern Lake Michigan were very cold, mostly 2-3° C. (35.6°-37.4° F.) except near shore. Extremes were 1.6° C. (35.3° F.) and 15.7° C. (60.3° F.). The latter was recorded at the mouth of the Grand River. A peculiar temperature inver-

sion was observed 5 miles offshore (25 fathoms) from Grand Haven. The water was vertically homothermous at 2.4° C. (36.3° F.) except for a shallow layer at 4.6° C. (40.3° F.) near the bottom.

Considerable lost time due to bad weather and engine trouble resulted in cancellation of scheduled trawling, gill-netting, and hydrographic work in the area off St. Joseph, Mich.

M/V "Cisco" Cruise 2, May 17-31, 1960: A loss of several days due to major engine repairs to the Cisco resulted in the cancellation of some of the work planned for cruise 2.

Trawl catches at 15, 20, 25, 27, 30, 35, and 40 fathoms off Grand Haven, Mich., ranged from 80 to 523 pounds per 30-minute tow. Average chub catches per tow were 163 pounds at 15 fathoms, 360 at 20 fathoms, 173 at 25 fathoms, 442 at 27 fathoms (one tow), 116 at 30 fathoms, 80 at 35 fathoms, and 88 at 40 fathoms. Practically all the chubs were bloaters (*Leucichthys hoyi*). Less than 5 percent were large enough for smoking. The proportion of larger chubs was somewhat greater at shallower depths. A fairly large number (42 pounds per tow) of deep-water sculpins was taken at 40 fathoms. At other depths the trawls caught only a few deep-water sculpins, slimy sculpins, alewives, smelt, lake herring, and yellow perch.

Catches at the beginning of the cruise were greater than at the end, when fathometer tracings indicated that there were many fish off the bottom. New, larger trawl doors were put into use at the beginning of the cruise. They appeared to spread the net better, but catches continued to be mostly small. Further trawling will be necessary before it can be determined whether these small catches are the result of the trawl fishing improperly, or whether there has been a scarcity of fish on the bottom.

Linen gill nets set in 25 fathoms (255 feet each of  $2\frac{1}{2}$ -,  $2\frac{1}{2}$ -,  $2\frac{1}{2}$ -,  $2\frac{1}{2}$ -, and 3-inch mesh) and 50 fathoms (510 feet of each of the above mesh sizes) off Grand Haven took more bloaters and less of the other species of chubs than did identical sets on about the same date in 1954). At 25 fathoms the catch this year was 213 *L. hoyi*, and 1 *L. alpenae*; in 1954 it was 78 *L. hoyi*, 5 *L. alpenae*, 8 *L. zenithicus*, and 8 *L. reighardi*. At 50 fathoms the catches were 378 *L. hoyi*, 4 *L. alpenae*, 1 *L. zenithicus*, 18 *L. reighardi* in 1960, and 258 *L. hoyi*, 6 *L. alpenae*, 14 *L. zenithicus*, 24 *L. reighardi*, and 18 *L. kiyi* in 1954.

Regular gangs of nylon gill nets (50 feet each of  $1\frac{1}{2}$ - and  $1\frac{1}{2}$ -inch mesh, 300 feet each of 2-,  $2\frac{1}{2}$ -,  $2\frac{1}{2}$ -,  $2\frac{1}{2}$ -, 3-,  $3\frac{1}{2}$ -, and 4-inch mesh) set overnight at 25 and 50 fathoms off Grand Haven produced many more chubs than the linen nets, but the species composition was similar. The 2-inch mesh proved the best chub mesh. At 25 fathoms it took 216 chubs weighing 46½ pounds as compared with 59 chubs weighing 7 pounds in the  $2\frac{1}{2}$ -inch mesh. The  $2\frac{1}{2}$ -inch mesh caught 73 chubs weighing 13½ pounds. This same relationship between catches in these mesh sizes was also true at 50 fathoms, but catches were smaller.

Rather light chub catches were made in regular gangs of nylon gill nets set overnight in 25 fathoms



and for 2 nights in 50 fathoms off Racine, Wis. One hundred ninety-five *L. hoyi*, 1 *L. zenithicus*, and 4 *L. reighardi* at 25 fathoms, and 381 *L. hoyi*, 4 *L. alpenae*, and 30 *L. reighardi* at 50 fathoms, constituted the chub catches. A few alewives were taken at both depths.

Appreciable surface warming (surface temperature mostly 7-12° C. or 14.6-53.6° F.) extended out for about 10 miles from both shores in southern Lake Michigan, but was more pronounced on the east side. In the central area the water remained practically isothermally vertically--surface temperature mostly 3.5-5.0° C. or 38.3-41.0° F. The minimum recorded was 3.4° C. (38.1° F.), and the maximum 18.8° C. (68.8° F.) near the mouth of the Grand River, Mich.

Note: Also see Commercial Fisheries Review, July 1960 p. 29.

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### WESTERN LAKE SUPERIOR FISHERY SURVEY:

M/V "Siscowet" Cruise 1: The first of three cruises of the U. S. Bureau of Commercial Fisheries research vessel *Siscowet*, scheduled in 1960 to study the bathymetric and areal distribution of fish stocks by systematically fishing standard gangs of experimental gill nets (mesh sizes 1" to 5" by  $\frac{1}{2}$ " intervals), was conducted (April 26-May 19, 1960) in western Lake Superior.

Standard gangs were fished at various depths south of Stockton Island and north of San Island. At the Stockton Island station the nets were set at 5, 15, 25, 35, and 54 fathoms. At the station north of San Island the nets were set at 15, 25, 52, and 82 fathoms. An oblique set from the surface to 50 fathoms was also made at both stations with nets having a mesh of  $2\frac{1}{4}$  inches.

Trawling operations were conducted at the Stockton Island station, Pike's Bay, north of Sand Island, and north of Houghton Point. A limited amount of inshore work was done along the southwest shore of Cat Island and the north shore of Stockton Island with the skiff powered by an outboard motor. Small trawls and plankton nets were towed in shallow waters immediately adjacent to shore in an effort to capture recently hatched fry.

Catches in the oblique sets were very sparse at both the Stockton Island station and the Sand Island station. Trawl catches were light at all areas trawled. One 15-minute tow in Pike's Bay (20 fathoms) took about 500 smelt, 2-3 inches in length. A 15-minute tow north of Houghton Point (12 fathoms) took 74 yellow perch averaging 3 inches in length. Tows made north of Sand Island (54 fathoms) took small numbers of ninespine sticklebacks, muddlers (3 species), and chubs (*L. hoyi*).

Catches in the inshore areas were also extremely light. Attempts to capture recently-hatched fry in both the trawl and larva net were unsuccessful.

Surface temperatures varied from 34.9° F. north of Sand Island to 38.4° F. south of Stockton Island. In the deeper areas (below 50 fathoms) the bottom temperatures were slightly warmer (about 40° F.).

M/V "Siscowet" Cruise 2: This cruise was a continuation of a long-term observation of environmental conditions and fish populations at three index stations established by the *Siscowet* in 1958. These stations are located southeast of Stockton Island, northeast of Bear Island, and east of Pike's Bay.

At each station standard gill-net gangs (1- to 5-inch mesh by  $\frac{1}{2}$ -inch intervals) were fished and limnological data and materials were collected including: records on water temperatures; water samples for chemical analyses; plankton and bottom samples; and Secchi-disc readings. Trawls were fished where possible but concentrations of commercial gill nets on the trawling grounds hampered operations at two of the stations.

The "bloaters" (*L. hoyi*) taken in Pike's Bay differed from those taken in deeper areas or in the open lake. The Pike's Bay variety were fatter fish and had larger eyes and less pigment on the head. The fins were often red. A large sample of these fish was preserved for morphological studies.

Trawl catches at the index stations were light and consisted mainly of slimy muddlers, ninespine sticklebacks, *L. hoyi*, and smelt.

Other activities included continuation of standard gangs of gill nets at various depths and locations to learn more of the bathymetric and areal distribution of fish. The fishing localities were: south of Oak Island (22 fathoms); east of Frog Bay (18 fathoms); east of Outer Island (65 fathoms); and north of Ironwood Island (27 fathoms).

In an attempt to capture fry and yearling stages, trawl tows were made southeast of Cat Island, west of Outer Island, east of Frog Bay, southeast of Michigan Island, and north of Ironwood Island. A  $\frac{1}{2}$ -meter plankton net (32 grit cloth) was also towed at these locations. Fish larvae were captured north of Ironwood Island at depths of 9 and 25 feet below the surface in 27 fathoms of water. The species most commonly caught in the trawl at nearly every location were slimy muddlers, ninespine sticklebacks, trout-perch, and smelt. In addition, *L. hoyi* and 4 small lake trout (8.2 to 13.6 inches) were taken southeast of Cat Island; whitefish (3.0 to 8.0 inches), pygmy whitefish, and one 4-inch lake trout were taken west of Outer Island; round whitefish (3 to 4 inches) and small (3 to 6 inches) unidentified coregonids were taken southeast of Michigan Island; lake trout (4 to 14 inches), whitefish (6 to 15 inches), *L. hoyi*, and pygmy whitefish were taken north of Ironwood Island.

Trawl tows were made east of Frog Bay to locate the 18-month-old lake trout planted from shore by the Wisconsin Conservation Department in early May. A tow in 9 to 11 fathoms just offshore from the planting site took no fish. Another tow farther offshore in 17 fathoms captured 19 small lake trout, 9 of which were 6 to 8 inches long and had the left pectoral fin clipped. These individuals were obviously from the Wisconsin plant. This discovery is comforting, as these young trout planted from shore apparently found a desirable environment as quickly as fish planted from a boat (the usual planting method).

A skiff powered with an outboard motor was used to make several tows with a  $\frac{1}{2}$ -meter plankton net

along the south shore of South Twin Island over a rocky bottom in 6 to 15 feet of water. Several extremely small fish larvae were captured.

The water was vertically homothermous at all stations. Surface temperatures varied from 37.4° F. northeast of Bear Island to 45.5° F. east of Frog Bay.

Note: Also see *Commercial Fisheries Review*, July 1960 p. 29.



## Gulf Exploratory Fishery Program

### EXPERIMENTAL MIDWATER TRAWLING OFF THE MISSISSIPPI DELTA:

M/V "Oregon" Cruise 67: A 6-day cruise (ending June 2, 1960) was made by the U. S. Bureau of Commercial Fisheries exploratory fishing vessel Oregon off the Mississippi Delta. The objective was to evaluate a newly designed midwater trawl, but a scarcity of midwater schools and a malfunctioning telemeter prevented any testing. Transects were made over the 30- to 40-fathom areas which had large concentrations of midwater fish during the previous December and March cruises, without finding any indications of fish at this time.

When traversing the 65-70 fathom area, just before sunset, fish were observed, on the echograph, rising from the bottom, forming into schools at 50 fathoms, and rising to 10-15 fathoms at sunset, then dispersing over the surface at dusk. The reverse cycle was observed the following morning at dawn. An unsuccessful attempt was made to capture these schools where they were forming at 50 fathoms and at 10-15 fathoms before dispersal. A mercury-vapor light failed to draw fish to the surface at night, although fish were observed at 5-10 fathoms below the vessel on echograph tracings. During daylight several short tows with a 40-foot shrimp trawl over the rough bottom where the schools dispersed produced the same species of scud (Decapтерus punctatus) that had been taken in midwater schools in the earlier cruises.

Ten bushels of scallops (*Pecten gibbus*) were dredged from 16 fathoms between Pensacola and Mobile for study.

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### SHRIMP-TRAWL UNDERWATER PERFORMANCE STUDIES CONTINUED:

M/V "George M. Bowers" Cruise 26: The study of shrimp-trawl performances was continued by the U. S. Bureau of Commercial Fisheries exploratory fishing vessel George M. Bowers off Eleuthra, British West Indies, and Panama City, Fla., between April 12-June 10, 1960. Observations and 9,600 feet of motion picture film of shrimp trawls were made by divers who rode a diving sled towed by the George M. Bowers. Trawls photographed were a 40-foot flat net, 2- and 4-seam semi-balloon nets, and a try net.

Note: Also see *Commercial Fisheries Review*, November 1959 p. 39, and January 1960 p. 39



## Hawaii

### BELOW-AVERAGE SKIPJACK TUNA SEASON PREDICTED:

Although the early part of the year is the "off-season," 1960 skipjack landings in Hawaii through April were only 70 percent of last year's landings and 87 percent of the average for the last 10 years. Three size-groups were present in the catch: 2.5 lbs., 9.5 lbs., and 25.7 lbs. Fish in the first two groups were the most common. Live bait (nehu) was also scarce.

Surface temperature data from Koko Head, Oahu, indicate that the advection of California Current Extension water into the Hawaiian Islands area will be weak and/or late this year. In previous years this condition has been associated with below-average skipjack catches. A below-average season was predicted by the U. S. Bureau of Commercial Fisheries at the end of March. Temperature data for April have not changed the prediction.



## King Crab

### TAGS FROM UNITED STATES TAGGING PROGRAM RETURNED BY RUSSIANS:

The King Crab Investigation of the U. S. Bureau of Commercial Fisheries received 34 tags recovered by the Russians while fishing in the Bering Sea. The recoveries were made between

July 17 and September 12, 1959, and included tags from live king crabs tagged



and released by United States biologists in 1957-59. The Russians also supplied recovery information.



## Maine Sardines

### CANNED STOCKS, JUNE 1, 1960:

Distributors' stocks of Maine sardines totaled 197,000 actual cases on June 1,

compared with 272,000 cases packed in the same period of 1959. The 1959 pack for the season which ended on December 1, 1959, was 1,753,000 standard cases.

The total supply (pack plus carryover beginning of season) for the season from April 15 to December 1, 1959, was 2,171,000 standard cases, somewhat lower than the total supply of 2,434,000 cases the previous season. The carryover on April 15, 1960, was 335,000 cases as compared to 420,000 cases on April 15, 1959.



## Michigan

### USE OF OTTER TRAWLS PERMITTED IN SOUTHERN LAKE MICHIGAN:

Conditioned by a zone restriction, a change was approved in Michigan's commercial fishing regulations in May 1960, by the Conservation Commission which would permit the use of otter trawls in southern Lake Michigan. The State's Governor signed an emergency order which placed the regulatory change in effect June 12.

Table 1 - Canned Maine Sardines--Wholesale Distributors' and Cannery's Stocks, June 1, 1960, With Comparisons <sup>1/</sup>									
Type	Unit	1959/60 Season				1958/59 Season			
		6/1/60	4/1/60	1/1/60	11/1/59	7/1/59	6/1/59	4/1/59	1/1/59
Distributors	1,000 Actual Cases	197	252	235	296	176	197	254	268
Cannery	1,000 Std. Cases <sup>2/</sup>	235	397	843	1,001	422	272	474	891
									1,037

<sup>1/</sup> Table represents marketing season from November 1-October 31.

<sup>2/</sup> 100 3 $\frac{3}{4}$ -oz. cans equals one standard case.

Note: See *Commercial Fisheries Review*, July 1960 p. 32 and March 1960 p. 22.

Correction: In table 1 on p. 22 of March 1960 *Commercial Fisheries Review*, the season heading "1957/58 Season" should read "1958/59 Season."

1960, the same amount on hand June 1, 1959. Stocks held by distributors on January 1, 1960, amounted to 235,000 cases, and on April 1, 1960, totaled 252,000 cases, according to estimates made by the U. S. Bureau of the Census.

Cannery's stocks on June 1, 1960, totaled 235,000 standard cases (100 3 $\frac{3}{4}$ -oz. cans), a decrease of 37,000 cases (14.0 percent) as compared with June 1, 1959. Stocks held by cannery on January 1, 1960, amounted to 843,000 cases and on April 1, 1960, totaled 397,000 standard cases.

The 1960 pack (from the season which opened on April 15, 1960) as of June 25 was about 194,000 standard cases as

Under the new regulation, the Conservation Department is authorized to issue trawling permits for netting "bloaters" chubs, herring, alewives, and smelts. It also is charged with regulating the kind and size of trawls, their mesh sizes, and the areas, and time and manner in which this new type of fishing gear may be used. How many permits will be issued and on what basis remains to be determined as do a number of other administrative matters.

The Commission gave Department of officials clear-cut instructions in a resolution limiting the use of trawls to Lake Michigan in an area south of Ludington to the Indiana border and west to Wisconsin waters.

## North Atlantic Fishery Investigations

### DECREASE IN HERRING DISEASE IN GULF OF ST. LAWRENCE:

Gulf of St. Lawrence herring were sampled during May 1960 by U. S. Bureau of Commercial Fisheries Biologists as part of the continuing epidemiological study of a fungus (*Ichthyosporidium*) disease. Examination of the samples disclosed that the incidence of disease in the Gulf has continued to slump following the 1954/55 outbreak, and is now at a very low ebb. These results agree with the general picture that emerged following the 1947 Gulf of Maine outbreak--a rapid decrease in incidence during the five years immediately following the epidemic.

Herring landings in the Gulf of St. Lawrence have shown signs of increasing this year--the first time this has been true since the disease outbreak. If the trend continues, it may indicate that year-classes spawned after the outbreak have not been seriously affected by the disease. This is supported by the observation that much of this year's catch is composed of disease-free recruit spawners.

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### POPULATION AND DENSITY OF SEA SCALLOP BEDS ON GEORGES BANK STUDIED:

M/V "Delaware" Cruise 60-8: A survey of the population structure and den-



The Service's research vessel Delaware.

sity of the sea scallop beds on Georges Bank was conducted (May 23-29, 1960), by the U. S. Bureau of Commercial Fisheries research vessel Delaware.

A total of 60 10-minute tows was made using a 10-foot dredge with a 2-inch ring bag. An odometer was towed behind the dredge to measure the distance traveled over the bottom. All live scallops and clapper shells were measured; sex ratios taken; gonads collected; and meats collected for length-weight ratio.

Results of the survey have not yet been analyzed, but in general the biologists did not find large numbers of the year-class which will be recruited this year and did find an unusually large number of clapper or dead shells in some areas.

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### UNDERWATER TELEVISION OFFERS NEW OPPORTUNITIES FOR FISHERY RESEARCH:

Biologists at the Woods Hole Biological Laboratory of the U. S. Bureau of

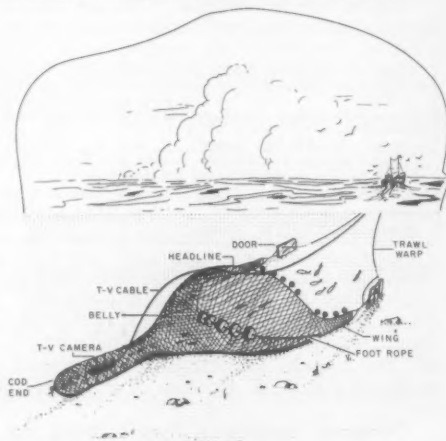


Fig. 1 - An otter trawl with the underwater television camera in the cod end.

Commercial Fisheries now are able to extend their studies with the help of underwater television to include observations of fishes as they are caught in otter trawls. The specially-designed television camera is suspended within the cod end of the trawl and the image transmitted over a coaxial cable to a receiver on board the

vessel. Continuous observations or motion picture recordings of the fish in the submerged net can be made by biologists in the comparative comfort of a ship-board laboratory.

A major problem in savings-gear studies has been the behavior of fishes in the trawl. Do the small fish actually try to escape through the meshes, as the biologists hoped they would? Do trash fishes clog the meshes, thus blocking the escape of immature cod fishes? Underwater television will now help to supply answers to these and other questions.



Fig. 2 - Biologist on board observing fish.

Careful analysis of motion picture recordings of the television screen has uncovered some interesting facts of species differences in behavior. For example, haddock seem to explore the confined area within the cod end, crossing from one side of the trawl to the other. In contrast, sand lance, an important marine forage species, seem in a hurry to escape through the meshes and usually do so in very rapid fashion.

Many future underwater television studies are planned by the Woods Hole Laboratory. One such study will examine the relationship between the swimming ability of fishes and the speed of the trawl moving over the ocean floor.



## Oysters

### UNDERWATER HARROW SHOWS PROMISE IN CONTROL OF STARFISH:

Experiments previously carried on at the U. S. Bureau of Commercial Fisheries Biological Laboratory at Milford, Conn., demonstrated that oyster drills can be killed by burial in soil. In order to further test this method as a means of controlling oyster predators, the Bureau has entered into a contract with a New Haven, Conn., Oyster Company. A disc harrow, similar to equipment used in agriculture, is being used on an oyster bed in Long Island Sound to turn over the bottom sediment and bury any drills and starfish present. SCUBA divers are being used to observe the harrowed areas at periodic intervals.

Further tank experiments using three types of substratum are also being conducted. Starfish completely buried in one inch of mud could not emerge and died in three to four days. Even when incompletely buried, with one or two rays protruding, approximately 80 percent were killed. Similar results were obtained in substrates of mud and shell and in sand.



## Radioactive Waste

### DISPOSAL SITES OFF NEW ENGLAND COAST SURVEYED:

A survey of a site off Boston Harbor formerly used for the disposal of limited quantities of packaged radioactive wastes has not revealed any radioactivity attributable to the disposal operations.

Samples of water, sediments, and marine organisms living in the area were collected by the U. S. Coast and Geodetic Survey and were analyzed for radioactivity by the U. S. Public Health Service at its Engineering Center in Cincinnati. The radioactivity detected was found to be in the same range as that of background activity at other ocean locations where there has been no disposal of radioactive wastes.

The site was used under Atomic Energy Commission (AEC) authorization and license from 1952 to August 1959, by a Boston disposal corporation, for the disposal of low-activity packaged radioactive wastes which had a total of 2,434 curies at the time of disposal. The former site is an area two miles in diameter located at 42° 25.5' N. lat. and 70° 35' W. long., 15 miles off Boston Harbor in Massachusetts Bay.

The license of the company was amended by the AEC in August 1959 to require the firm to carry out its operations in deep water (1,000 fathoms) off the continental shelf. No further use of the area off Boston Harbor for disposal purposes is contemplated. The Commission's present policy is to require that wastes be disposed of in water at



least 1,000 fathoms deep and the Commission is not contemplating any change in that policy.

The Massachusetts Bay site is one of four off the New England coast studied during the past year by scientists from the University of Connecticut, the U. S. Coast and Geodetic Survey, and the U. S. Public Health Service, working in conjunction with the Bureau of Commercial Fisheries of the U. S. Fish and Wildlife Service. The work was part of a research program financed by the Atomic Energy Commission.

While the studies have indicated that each of the four inshore locations would be capable of providing sufficient dilution to dispose safely of 250 curies per year of strontium 90 or its equivalent, the Commission has no plan to use or approve the use of these sites. The surveys were conducted from a long-range point of view--to gather information for use should a need ever arise.

One of the four locations surveyed, the southern half of a restricted area known as No Mans Land (off Martha's Vineyard Island) and used as a Naval gunnery range, was dropped from consideration. The scientists agreed that the site was safe for the disposal of limited amounts of packaged radioactive wastes, but pointed out that nearby ocean locations are popular with fishermen, and tidal and nontidal currents through the site are predominantly landward.

The two remaining sites studied were a 25-square-mile area centered at 42° 13.4' N. lat. and 69° 45' W. long., approximately 75 nautical miles northeast of the No Mans Land area and a 25-square mile area centered at 40° 45' N. lat. and 70° 52.7' W. long., approximately 28 nautical miles south of the No Mans Land site.

Note: Also see *Commercial Fisheries Review*, June 1959 p. 28.



## Salmon

### CALIFORNIA COMPLETES KING SALMON MARKING FOR 1960 SEASON:

Despite a disease outbreak in the salmon hatchery this spring which threatened to scuttle the program, the California Department of Fish and Game's Marine Resources Branch completed its king salmon marking project for this year. It is expected that marking will be resumed next year.

The disease broke out in the U. S. Fish and Wildlife Service's Coleman Hatchery in March, halting marking, which had begun in February. The disease, still under study, disappeared in April and the marking project was completed by mid-May.

Over 1 million marked fish were released into the Sacramento River drainage in three lots, each lot with a different marking. One group was placed in a river tributary near the hatchery; another group was trucked to Rio Vista; and the third lot was taken by boat from Rio Vista to water of about 50-percent salinity usually upper San Pablo Bay.

Purpose of the experiment is to learn the effect of fresh-water hazards on the king salmon run. These hazards include predation, stream diversions, and pollution.

None of the fish marked in 1959 has shown up in the 1960 catch yet, but a Department Biologist says some may show up in the sport catch as two-year-old fish this summer. The majority are expected to appear in the sport and commercial catch beginning in the winter of 1961.

Between 50,000-68,000 fish in each lot were released weekly. The State's Darrah Springs Hatchery hauled fish from Coleman to Rio Vista and a Federal truck took the fish from Coleman Hatchery to Battle Creek, a Sacramento River tributary not far from Coleman.



## Tuna

### ALBACORE CATCHES BY CALIFORNIA PARTY BOATS MAY INDICATE GOOD SEASON:

California party-boat fishermen late in June 1960, had their first chance in nearly two years at albacore tuna and may get a few more chances, if the favorable oceanic conditions continue, biologists of the California Department of Fish and Game's Marine Resources Operations predicted on July 1.

A few albacore had been caught near San Clemente Island by June 22 and by June 25 at least 500 had been recorded by party-boat fishermen. The fish were taken between 10 and 40 miles off San Clemente Island at the extreme outer range of the sport fleet and right where the Department figured they would be.

In all of last year, only 39 albacore were reported taken by sports fishermen and the previous year only 6,482 had been caught. These figures are a far cry from the peak years of 1955, 1956, and 1957 when sports fishermen landed 78,000, 65,000, and 41,000 albacore, respectively.

While the initial success off San Clemente is no guarantee of a good albacore season in 1960, the Department has

reason to believe the early catches may herald a return to the good days of the recent past. At the very least, fishermen should experience successes at least as well as they did off San Clemente in late June.

Reason for the Department's cautious optimism about the 1960 season may be found in the log book of the State's Fish and Game research vessel N. B. Scofield, which recently completed an extensive 3,000-mile 26-day cruise into the offshore waters of California and Baja California. Purpose of the trip was to intercept albacore schools prior to their appearance on the local fishing grounds and to follow them into areas of commercial concentrations.

Fisheries scientists concluded that local conditions seem more suitable than they have for the last several years for the fish to move relatively close to shore as the season progresses.

The initial albacore catch on the research vessel's cruise was made about 500 miles west of San Francisco. From that point catches continued throughout the survey in a generally southeasterly direction to as far south as 275 miles west of San Quintin, Baja California. The southernmost catches tend to bear out once again the Department's earlier prediction, based on April oceanic conditions, that fishing south of Guadalupe Island, Mexico, should be comparatively poor.

No commercial concentrations of fish were found. The albacore were widely scattered throughout most of the survey area in water temperatures ranging from 60-64° F. Best fishing was found in the small temperature range of 61-62° F.

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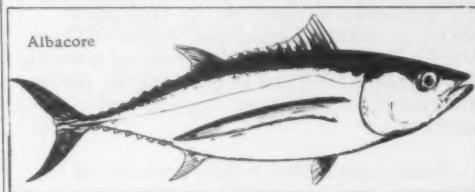
#### ALBACORE MIGRATIONS AND DISTRIBUTION STUDIED BY OREGON BIOLOGISTS:

Another albacore tuna exploratory cruise by biologists of the Oregon Fish Commission was scheduled to start the last week of June. A vessel chartered by the Commission will collect basic oceanographic data and study the migration and distribution of the albacore tuna.

The albacore, which was recognized commercially when first caught off the coast of Oregon in 1936, reached a production peak of 22 million pounds in 1944 and about 10 years later the catch fell to 0.5 million pounds. The decline in catch is not a case of depletion, but rather is due to the migration of these fish. It is with this erratic behavior of the albacore that Commission biologists are concerned.

Oregon offshore waters will be studied and the albacore caught will be tagged and returned to sea. Water temperature, salinity, and clearness will be related, if possible, to the presence or abundance of albacore. The findings will be ultimately passed along to the commercial troll fleet so that the fishery can be developed to a greater efficiency.

Albacore, it is now known, follow a drift of warm clear blue water between 30 and



100 miles offshore, beyond a colder, murkier band of water closer to shore. According to the biologists, most of the albacore caught and tagged in 1959 were about 25 inches long. It is believed, too, that no albacore were taken during the 1959 cruise north of the line approximately west from the Umpqua River, in spite of the high temperatures (in excess of 61° F.) encountered north of that point.

The spawning areas of albacore are probably somewhere in the mid-Pacific. The young fish make extensive feeding migrations to distant reaches of the Pacific. It is during these feeding journeys that albacore appear along the coast of Oregon. One tagged by the Oregon Fish Commission was recovered 10 months later off the coast of Japan—a journey of 5,000 miles.

Albacore catches vary widely from year to year. The reasons for this great fluctuation are not fully understood. Ocean currents, water temperature, or food supply undoubtedly influence the availability of fish. Some years landings by the commercial vessels are influenced by market conditions.

An Oregon State College Department of Oceanography biologist was to take part in the Oregon Commission's cruise. Other College biologists also will make studies of their own at the same time in a separate vessel.

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**ALBACORE TAGGED IN  
1956 OFF SAN FRANCISCO  
RECOVERED BY JAPANESE:**

An albacore tuna tagged and released off San Francisco, Calif., by biologists of the U. S. Bureau of Commercial Fisheries, Honolulu Biological Laboratory, was recaptured by a Japanese tuna long-liner about 1,000 miles southeast of Tokyo Bay, in the vicinity of Marcus Island. This fish was tagged by the Bureau's research vessel *Charles H. Gilbert* on November 15, 1956, and was recaptured by the Japanese vessel, No. 2, *Hayatori Maru* of Iwate Prefecture, Japan, on March 13, 1960, after a period of 3 years and 4 months. This is the longest period thus far noted between tagging and recapture.

This marked the 17th recovery of an albacore tuna tagged by the Honolulu Laboratory. Other recoveries in the past have also demonstrated considerable trans-Pacific movements extending from the United States west coast to the vicinity of Tokyo Bay, indicating that there is probably a single population of this valuable tuna species in the North Pacific.



**U. S. Foreign Trade**

**CONFERENCE HELD ON  
UNITED STATES FISHERY  
EXPORT TRADE PROMOTION:**

A special conference was held on June 20, 1960, between representatives of the fishing industry and Federal Agencies to consider the present export situation and to obtain the advice of industry as to specific moves the Government might undertake to give maximum assistance in increasing sales of United States fishery products abroad. This meeting was part of a series of conferences being held under the Executive Department's program to promote the expansion of United States exports.

Consideration was given to ways of strengthening the trade promotion services of the Government, to expanding and giving higher priority to the commer-

cial activities of the Foreign Service, to placing greater emphasis on the prompt reporting of information useful to United States exporters, to making fuller use of trade fairs, trade missions, and other means to stimulate the interest of foreign buyers in United States fishery products. Also, specific suggestions were sought on the following subjects: (1) kinds of fishery products that could be sold abroad; (2) where these products could be marketed; (3) reductions in duties, or in quantitative restrictions that might benefit our exports; (4) other barriers to trade that, if lessened or removed, might benefit our exports; and (5) other actions that the Government can take to serve the fishing industry better abroad.

The meeting was held in Washington, D. C., and was open to interested industry representatives who wished to participate. Those planning to attend were asked to submit, prior to the meeting, a summary concerning specific ways that the Government may facilitate the export of fishery products. Interested persons, unable to attend, submitted in writing, prior to the meeting, their comments and recommendations on the items considered.

Methods by which Government agencies can help the American fishing industry increase exports to foreign markets are being studied by the U. S. Department of the Interior as a result of the Government-industry export conference.

The conference was sponsored by the Department of the Interior with cooperation of the Departments of Commerce and State. It was attended by representatives of a number of the major fishing and fish processing industries. Also, participating in the meeting were representatives of the Export-Import Bank and the Federal Trade Commission.

At the conference it was suggested that the industry should aim specifically at foreign markets by preparing fishery products to meet the consumer preference of persons in other countries and not merely attempt to market abroad products prepared for the American consumer. Numerous examples of differences of consumer preferences were given. It was generally agreed, however, that more knowledge of the tastes and desires of consumers in other countries is necessary if the American processor is to gear for the foreign market. It was also suggested that more active price competition might increase exports.

Industry spokesmen at the conference also pointed out numerous trade impediments such as high tariffs and taxes, import licenses, excessive exchange guarantees as well as transportation cost differentials, and labelling requirements.

Other speakers pointed out the need for more prompt and precise reporting of foreign market conditions, on prices of foreign products, costs of production and the intent of foreign countries to purchase fishery products, the need for better export credit facilities and risk insurance, especially for small companies.

Other matters stressed included the need for more promotion of American fishery products in foreign fields and the necessity of having commercial officers abroad who have experience in fisheries.

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### EDIBLE FISHERY PRODUCTS, APRIL 1960:

Imports of edible fresh, frozen, and processed fish and shellfish into the United States during April 1960 decreased by 5.5 percent in quantity and 6.2 percent in value as compared with March 1960. The decrease was due primarily to substantially lower imports of frozen albacore tuna (down 6.3 million pounds) and, to a lesser degree, a decrease in the imports of frozen shrimp, frozen and canned salmon, canned sardines, and fillets other than groundfish. The decrease was partly offset by increases in the imports of groundfish fillets (up 2.6 million pounds), frozen tuna other than albacore, and canned tuna in brine.

Compared with April 1959, the imports in April this year were lower by 16.1 percent in quantity and 12.7 percent in value due to substantially lower imports of groundfish fillets (down 4.6 million pounds), frozen tuna other than albacore (down 7.5 million pounds), and to a lesser extent, frozen albacore, canned and frozen salmon, and frozen shrimp. Offsetting the drop were increases in the imports of canned sardines and canned tuna in brine.

Item	QUANTITY			VALUE		
	April		Year	April		Year
	1960	1959	1959	1960	1959	1959
	(Millions of Lbs.)			(Millions of \$)		
<b>Imports:</b>						
Fish & Shellfish:						
Fresh, frozen, & processed <sup>1/</sup>	75.8	90.4	1,070.5	22.6	25.9	309.8
<b>Exports:</b>						
Fish & Shellfish:						
Processed only <sup>1/</sup> (excluding fresh & frozen)	3.5	5.2	68.0	1.3	1.1	22.8

<sup>1/</sup>Includes pastes, sauces, clam chowder and juice, and other specialties.

United States exports of processed fish and shellfish in April 1960 were higher by 1.9 percent in quantity and 44.4 percent in value as compared with March 1960. Compared with the same month in 1959, the exports this April were lower by 18.2 percent in quantity, but were higher by 18.2 percent in value. The lower exports in April this year as compared with the same month in 1959 were due to the small supplies available of fishery products that contribute substantially to

the United States export trade in these products.

The relatively high value of the fishery products exported this April over April 1959 would indicate that the April 1960 exports were made up of the higher-priced products such as canned salmon and frozen shrimp.

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### IMPORTS OF CANNED TUNA IN BRINE UNDER QUOTA AS OF JUNE 4:

The quantity of tuna canned in brine which may be imported into the United States during the calendar year 1960 at the 12½-percent rate of duty is 53,448,330 pounds. Any imports in excess of the quota will be dutiable at 25 percent ad valorem.

Imports from January 1-June 4, 1960, amounted to 18,262,874 pounds, according to data compiled by the Bureau of Customs. From January 1-May 30, 1959, a total of 17,689,773 pounds had been imported.

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### IMPORTS AND EXPORTS OF SELECTED FISHERY PRODUCTS, JANUARY-MARCH 1960:

During the first quarter of 1960, groundfish and ocean-perch fillets and blocks, frozen tuna, canned tuna, and fish meal were imported into the United States in lesser quantities than during the same first quarter of 1959. Lobster and shrimp imports were higher than for the 1959 period. In the fishery export trade there were gains in shrimp, fish oils, and squid; declines were noted in canned salmon and canned sardines.

**Imports: GROUNDFISH AND OCEAN-PERCH FILLETS AND BLOCKS:** Imports (32,194,000 pounds) were 14 percent less than during the first three months of 1959. Icelandic, Norwegian, and Danish shipments were lower than those of the like period of 1959; Canadian shipments were higher.

**TUNA, FRESH OR FROZEN:** The frozen tuna imported during the first quarter of 1960 (51,214,000 pounds) was below imports for the comparable period of 1959. A 70-percent increase in imports of frozen albacore tuna was not sufficient to overcome a 47-percent decrease in receipts of other frozen tuna, primarily yellowfin. Japanese shipments of other frozen tuna were less than one-half those for the same 1959 period; Peruvian shipments were less than two-thirds the level of the first quarter of 1959.

**TUNA, CANNED IN BRINE:** During January-March 1960, total imports of canned white-meat tuna in brine (2,284,000 pounds) were 4 percent above those of the comparable period of 1959. Imports from Japan, however, were down 23 percent. Increased imports were received from Spain and other countries. Larger receipts of Spanish canned albacore have resulted from the devaluation of the Spanish currency.

Total imports of canned light-meat tuna in brine (6,649,000 pounds) were 26 percent below those of the first quarter of 1959. Imports from Japan were down 37 percent. The 1960 quota of all canned tuna in brine which may enter the United States at the 12-1/2-percent rate of duty was fixed at 53,446,330 pounds.

**SHRIMP, MOSTLY FROZEN:** Imports of shrimp (24,798,000 pounds) were 2 percent higher than those of the first quarter of 1959. Mexico, the largest supplier, accounted for nearly two-thirds of the total. Receipts from Japan fell to less than one-third those of the similar period of 1959.

**SALMON, CANNED AND FRESH OR FROZEN:** Imports of canned salmon (10,033,000 pounds) declined 21 percent from those of January-March 1959; Japan supplied nearly all of this product. Likewise, imports of fresh and frozen salmon (1,427,000 pounds) were down 35 percent from those during the like months of 1959; Canada supplied the entire amount.

**LOBSTER AND SPINY LOBSTER, FRESH OR FROZEN:** During the first quarter of 1960, both imports of northern lobster (2,857,000 pounds) and spiny lobster (10,319,000 pounds) were higher than those of the same period of 1959. Imports from Canada were up 36 percent. The principal increases in receipts of spiny lobster were noted from the Union of South Africa and Australia, each of which were up 65 percent.

**CANNED CRABMEAT AND CANNED OYSTERS:** Imports of canned crab meat (929,000 pounds) fell 46 percent; imports of canned oysters (1,477,000 pounds) rose 5 percent. Japan supplied nearly all of these products.

**FRESH OR FROZEN SEA SCALLOPS:** During the first quarter of 1960, Canada shipped 70 percent more than in the like period of 1959. Imports from Japan fell 30 percent. Total imports of sea scallops (888,000 pounds) were 29 percent higher than during January-March 1959.

**CANNED SARDINES:** Imports of canned sardines in oil (5,483,000 pounds) were 3 percent higher during the first quarter of 1960. Imports of canned sardines not in oil (3,079,000 pounds) rose sharply, and receipts for the first quarter were three times those received during the entire calendar year of 1959. This was due primarily to the lower supplies of domestic packs of sardines not in oil.

**FISH MEAL:** During the first quarter of 1960, imports of fish meal (35,704 tons) were down 37 percent from the same period of last year. Peruvian fish meal accounted for nearly 50 percent of the total trade. No fish meal was received from Angola, which supplied almost one-third of the imports in the first three months of 1959.

**FISH SOLUBLES:** Denmark supplied 85 percent of the fish solubles during January-March 1960. Total imports (2,176,000 pounds) were down about 8 percent from the same period of 1959.

**Exports: CANNED SARDINES, NOT IN OIL:** Exports for the first quarter of 1960 (6,912,000 pounds) were down about 18 percent from those of the same period of 1959. The sharpest decline was in exports to Cuba, which took only 29,000 pounds as compared with 1,277,000 pounds during January-March 1959.

**CANNED SALMON:** Owing to reduced shipments to the Philippines in the first quarter of 1960, exports of canned salmon (1,350,000 pounds) declined 53 percent. The United Kingdom took more than twice as much canned salmon as in the comparable period of 1959.

**SHRIMP, FRESH OR FROZEN AND CANNED:** Exports of canned shrimp (604,000 pounds) were 9 percent above those of January-March 1959; exports of fresh or frozen shrimp (636,000 pounds) were 70 percent higher. Canada took the major share of these products.

**CANNED SQUID:** During January-March 1960, exports (4,577,000 pounds) were over nine times those of the same period of 1959. The Philippines took 85 percent of the total. In April 1960, however, the Central Bank of the Philippines changed the import classification of squid from the decontrolled category to the nonessential consumer

category. This change will make foreign exchange, necessary to pay for imports of squid, more expensive as well as more difficult to obtain. An adverse effect may be expected in the trend in Philippine imports of United States canned squid.

**FISH OILS:** During the first quarter of 1960, northern European countries took practically all the fish oil exports. Total exports in that period of 29,053,000 pounds were 56 percent more than during the same quarter of 1959.

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## WORLD MARKETS FOR UNITED STATES FISHERY PRODUCTS IN 1959:

The value of United States exports of fishery products in 1959 was the highest since 1947. Exports, valued at \$44,241,000, were 43 percent above those of 1958, although 16 percent less than the peak level reached in 1947.

Table 1 - United States Exports of Fishery Products by Selected Countries of Destination, 1955-59

Country	1959	1958	1957	1956	1955
	.....(US\$1,000).....				
United Kingdom	8,928	5,785	3,708	2,204	3,706
Canada	8,644	9,200	7,253	8,107	10,037
Philippines	5,587	2,578	6,027	8,065	8,556
Netherlands	4,352	2,007	2,969	4,961	7,201
Sweden	3,176	681	1,844	848	308
West Germany	2,888	3,043	5,099	6,121	1,900
Norway	1,296	1,063	970	1,065	991
Japan	928	501	669	595	610
Mexico	663	393	175	143	112
Cuba	787	490	721	743	676
Venezuela	614	641	573	588	442
Belgium & Luxembourg	746	948	447	504	464
France	766	68	259	428	206
Switzerland	762	387	463	473	317
Italy	303	158	259	339	139
Greece	306	136	195	261	213
Other	3,495	2,925	4,321	4,060	4,099
Total	44,241	31,004	35,952	39,503	39,977

In value of products taken, the United Kingdom was the leading foreign market for United States fishery products during 1959. In September 1959, British import restrictions were completely removed on canned salmon imports from the dollar area. In 1959, United States shipments of canned salmon to the United Kingdom increased \$2,569,000 above the previous year. In 1959 the United Kingdom received from the United States: canned salmon \$8,321,000, other fishery products \$607,000; total \$8,928,000.

Canada, another leading market in recent years, was only slightly behind the United Kingdom. Canada purchased a wide variety of United States products: canned shrimp \$1,894,000; fresh or frozen shrimp \$1,396,000; oysters \$571,000; seal fur \$1,537,000; fish and marine animal oils \$361,000; other fishery products \$2,885,000; total \$8,644,000.

The Philippines has been a good market for United States fishery products. Although United States products still receive preferential tariff treatment in that market, the margin of preference is being gradually reduced. In 1959, the principal products taken were: canned California sardines \$3,851,000; canned salmon \$1,005,000; canned squid \$594,000; other fishery products \$137,000; total \$5,587,000.

Table 2 - United States Exports of Fishery Products to Four European Countries, 1959

Country	Fish and Marine-Animal Oils	Other	Total Fishery Products
	.....(US\$1,000).....		
Netherlands	3,828	524	4,352
Sweden	2,889	187	3,176
West Germany	2,552	336	2,888
Norway	1,193	103	1,296

In 1959, United States fishery exports to the Netherlands, West Germany, Norway, and Sweden were primarily fish and marine-animal oils. The importance of fish oils, mainly menhaden oil, to the total, is shown in table 2. Canned salmon provided a large part of the "other" products: \$363,000 for the Netherlands; \$166,000 for West Germany; and \$133,000 for Sweden.

United States exports to Japan, valued at \$928,000 in 1959, consisted primarily of unmanufactured shells, valued at \$867,000. Shipments of unmanufactured shells were nearly double those during 1958 and accounted for most of the increase in the total export of fishery products to Japan.

Europe was the leading foreign market for United States fishery products during 1959, taking \$23,671,000, or more than the value of trade to the rest of the world combined (table 3). The European market was based primarily on two products, fish oils valued at \$11,290,000 and canned salmon at \$8,816,000.

Table 3 - United States Exports of Fishery Products by Area of Destination, 1959

Area	Edible	Inedible	Total
	(US\$1,000)		
North America	8,081	3,537	11,618
South America	902	58	960
Europe	10,923	12,748	23,671
Asia	6,093	1,098	7,191
Africa	251	6	257
Oceania	495	49	544
Total	26,745	17,496	44,241

In recent years, four products--fish oils, canned salmon, canned sardines, and canned shrimp--have provided over half of the annual exports of United States fishery products (table 4).

Table 4 - Four Products Provided Over Half of United States Fishery Products in 1959

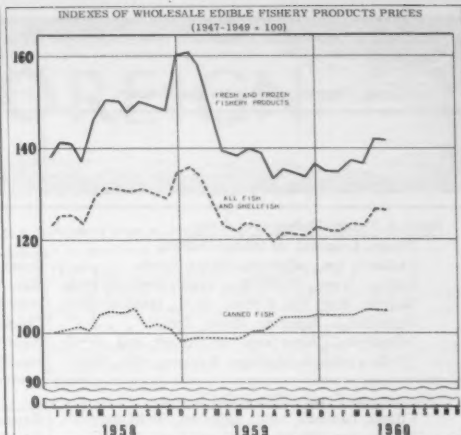
Product	Value	Percent of Total
Fish oils	\$11,902,000	27
Canned salmon	10,639,000	24
Canned sardines	5,843,000	13
Canned shrimp	2,898,000	7
Other	12,959,000	29
Total	\$44,241,000	100



## Wholesale Prices, June 1960

The wholesale price index for edible fishery products (fresh, frozen, and canned) for June 1960 at 126.5 percent of the 1947-49 average was about unchanged from the preceding month. Increases in wholesale prices for fresh small haddock fillets, dressed halibut, fresh king salmon, and minor price increases for several other items were more than offset by price declines in shrimp and fresh-water items from the Great Lakes. From June last year to this June the index rose 2.4 percent due primarily to higher prices for fresh salmon, shucked oysters, frozen shrimp, and canned fish prices.

The index for the drawn, dressed, and whole finfish subgroup this June at 149.7 percent was down 0.3 percent as compared with May, but was 1.2 percent higher than in the same month of 1959. From May to June, price declines for large drawn haddock (down 6.2 percent) and fresh-water species (due to more normal supplies) more than offset price increases of 10.9 percent for fresh halibut and 2.4 percent for fresh salmon. June 1960 prices



were higher than in the same month of 1959 because higher prices for dressed salmon (up 7.7 percent) and Lake Superior whitefish (up 1 percent) offset lower prices for fresh haddock, Lake Erie whitefish, and Great Lakes yellow pike.

The fresh processed fish and shellfish subgroup index this June declined 0.7 percent from May due to a 4.7-percent decrease in the fresh shrimp price at New York City. A sharply higher price for fresh haddock fillets at Boston did not offset the lower price for fresh shrimp. Fresh shucked oyster prices were unchanged in June from a month earlier. The June 1960 subgroup price index was up about 5.9 percent from June a year ago due principally to higher prices for shucked oysters (up 19.5 percent) because they are out-of-season in most areas. Lower prices for fresh haddock fillets and fresh shrimp offset to a certain extent the higher shucked oyster prices.



In June this year the index for processed frozen fish and shellfish rose less than one percent from a month earlier. An increase of about one cent a pound in the frozen flounder fillet price and a fractionally higher frozen shrimp price offset declines of about one-half cent a pound in frozen haddock and ocean perch fillet prices. From June 1959 to this June the index for this subgroup dropped 3.3 percent due primarily to lower prices at Boston for frozen haddock fillets (down 25.4 percent) and frozen ocean perch fillets (down 1.8 percent). But these increases were partly offset by an increase of 2.2 percent for frozen shrimp at Chicago.

The canned fish price index remained unchanged in June this year from the preceding month and has moved in a very narrow range since late 1959. However, whole-

Table 1 - Wholesale Average Prices and Indexes for Edible Fish and Shellfish, June 1960 With Comparisons

Group, Subgroup, and Item Specification	Point of Pricing	Unit	Avg. Prices <sup>1</sup> / (\$)		Indexes (1947-49=100)			
			June 1960	May 1960	June 1960	May 1960	Apr. 1960	June 1959
ALL FISH & SHELLFISH (Fresh, Frozen, & Canned) . . . . .					126.5	126.6	123.3	123.5
<u>Fresh &amp; Frozen Fishery Products:</u> . . . . .					142.0	142.2	136.7	139.9
Drawn, Dressed, or Whole Finfish . . . . .					149.7	150.1	144.3	147.9
Haddock, lge., offshore, drawn, fresh . . . . .	Boston	lb.	.09	.09	88.3	94.1	60.8	109.1
Halibut, West., 20/80 lbs., drsd., fresh or froz.	New York	lb.	.34	.30	103.7	93.5	92.8	105.2
Salmon, lng., lge. & med., drsd., fresh or froz.	New York	lb.	.84	.82	189.3	184.8	179.2	175.8
Whitefish, L. Superior, drawn, fresh . . . . .	Chicago	lb.	.57	.74	141.3	183.4	241.7	140.1
Whitefish, L. Erie pound or gill net, rnd., fresh	New York	lb.	.83	1.05	166.9	212.5	212.5	177.0
Yellow pike, L. Michigan & Huron, rnd., fresh	New York	lb.	.67	.73	155.9	170.0	234.5	158.3
<u>Processed, Fresh (Fish &amp; Shellfish):</u> . . . . .					144.8	145.8	137.1	136.7
Fillers, haddock, sml., skins on, 20-lb. tins . .	Boston	lb.	.37	.27	125.9	91.9	93.6	129.3
Shrimp, lge. (26-30 count), headless, fresh. . .	New York	lb.	.82	.86	128.8	135.1	123.2	133.5
Oysters, shucked, standards . . . . .	Norfolk	gal.	6.88	6.88	170.1	170.1	164.0	142.3
<u>Processed, Frozen (Fish &amp; Shellfish):</u> . . . . .					118.4	117.7	116.2	122.4
Fillers: Flounder, skinless, 1-lb. pkg. . . . .	Boston	lb.	.39	.38	102.1	98.1	99.5	102.1
Haddock, sml., skins on, 1-lb. pkg. . . . .	Boston	lb.	.25	.26	78.5	80.1	84.8	105.2
Ocean perch, skins on, 1-lb. pkg. . . . .	Boston	lb.	.28	.28	110.8	112.8	116.8	112.8
Shrimp, lge. (26-30 count), 5-lb. pkg. . . . .	Chicago	lb.	.80	.80	123.8	123.5	118.0	121.1
<u>Canned Fishery Products:</u> . . . . .					104.8	104.8	104.8	100.4
Salmon, pink, No. 1 tall (16 oz.), 48 cans/cs. . .	Seattle	cs.	24.50	24.50	127.8	127.8	127.8	122.6
Tuna, lt. meat, chunk, No. 1/2 tuna (6-1/2 oz.), 48 cans/cs. . . . .	Los Angeles	cs.	11.10	11.10	80.0	80.0	80.0	77.9
Sardines, Calif., tom. pack, No. 1 oval (15 oz.), 48 cans/cs. . . . .	Los Angeles	cs.	8.00	8.00	93.9	93.9	93.9	83.9
Sardines, Maine, keyless oil, No. 1/4 drawn (3-3/4 oz.), 100 cans/cs. . . . .	New York	cs.	8.75	8.75	93.1	93.1	93.1	87.5

<sup>1</sup>/Represent average prices for one day (Monday or Tuesday) during the week in which the 15th of the month occurs. These prices are published as indicators of movement and not necessarily absolute level. Daily Market News Service "Fishery Products Reports" should be referred to for actual prices.

sale prices this June were up about 4.4 percent from June 1959. Over-all stocks of canned fish remained very light with distributors still depending on the 1959 packs of Pacific salmon and Maine sardines. Supplies of California tomato-pack sardines in 15-oz. cans in the hands of primary distributors have been practically exhausted in recent months, but South African imports have filled the gap.



## Wisconsin

### EXPERIMENTAL OTTER TRAWLING SUCCESSFUL:

Wisconsin has issued experimental trawling permits to interested industry members; three fishermen with technical assistance from the U. S. Bureau of Commercial Fisheries have been successful. During four months last fall and winter the fishermen took well over

a million pounds of fish. One of them recently purchased a Gulf shrimp trawler which is now fishing in Lake Michigan. The catch of this one firm now averages about 40,000 pounds of fish per day, and they are striving to bring it up to 100,000 pounds per day.



### FISH FACT

Lean fish may contain as little as 0.5 percent fat, whereas a few species of fat fish may contain as much as 20 percent fat. Fish can thus be chosen to fit into either low-calorie diets designed for weight reduction or high-calorie diets designed to provide a high level of energy.



## International

### CARIBBEAN ORGANIZATION REPLACES CARIBBEAN COMMISSION

The Agreement for the establishment of the Caribbean Organization was signed in Washington, June 21, 1960, by France, the Netherlands, the United Kingdom, and the United States.

The Caribbean Organization will be the successor body to the Caribbean Commission, established in 1946 to encourage cooperation in economic (including fisheries) and social development throughout the French, Netherlands, British, and United States areas in the Caribbean. The Organization will have broadly the same objectives as the Commission, but its activities will be directed by a Council on which the following are eligible to be represented: the Republic of France for the Departments of French Guiana, Guadeloupe, and Martinique; the Netherlands Antilles; Surinam; the Bahamas; British Guiana; British Honduras; the British Virgin Islands; the West Indies; the Commonwealth of Puerto Rico; the Virgin Islands of the United States.

This change has been made in response to the express wishes of the peoples of the area. The new Organization will reflect the significant constitutional and economic changes which have taken place in the area since 1946.

After the Agreement has been approved or accepted by the signatory parties they will issue a joint declaration bringing the new Organization into existence. It is hoped that this will be done as early as possible in 1961. The headquarters of the new Organization will be located in San Juan, Puerto Rico, to which the Commission headquarters have recently been transferred.

### EUROPEAN FREE TRADE ASSOCIATION

#### UNITED STATES VIEWS:

The views of the United States on the European Free Trade Association were presented to the Sixteenth Session of the Contracting Parties to the General Agreement on Tariffs and Trade at Geneva, Switzerland, on May 17, 1960, by the U. S. Deputy Assistant Secretary of State for Economic Affairs, who was chairman of the United States delegation to the GATT meeting.

"The present session affords the Contracting Parties their first opportunity to review the Stockholm Convention, one of the more significant post-war developments in international commercial policy." (The Stockholm Convention, signed on November 20, 1959, calls for the formulation of a free-trade area among Austria, Denmark, Norway, Portugal, Sweden, Switzerland, and the United Kingdom. The first tariff reduction will take place on July 1, 1960.)

"The European Free Trade Association has now been ratified by all seven member states and will shortly enter into force. In our view it represents an important effort to lower trade barriers and to strengthen economic cooperation among its members. As such it commands the sympathetic and serious consideration of us all. . . .

"Our over-all view of the Stockholm Convention is that, on balance, it deserves the support and approval of the Contracting Parties. While there will be questions concerning specific aspects of the trade arrangements provided for in the convention and, we hope, responsive adjustments on the part of the parties to the convention, nevertheless, as a whole, it is in our judgment in harmony with the spirit and broad objectives of the General Agreement.

"Together, the seven countries which make up the EFTA represent a group with considerable influence on the volume and direction of international trade. Like all regional trading arrangements, the EFTA will mean change. It will require adjustments for producers and consumers inside the Association and in countries which trade with the Seven. These adjustments may raise problems. But they will also provide opportunities. If sound and liberal policies are followed by the Seven in the endeavor they are now beginning, the result can be increased trade and prosperity both for the member states and for their trading partners. Ministers of the Seven meeting at Stockholm on November 20, 1959, pointed out that 'as world trading nations, the countries of the European Free Trade Association are particularly conscious of Europe's links with the rest of the world.' As the EFTA enters into force, the United States is con-



### International (Contd.):

fident that the convention will be carried out in a manner to maximize trade-creating effects and to minimize problems for other countries, both in Europe and in other parts of the world.

"We believe that the procedures whereby the Contracting Parties will consider and, we hope, approve the Stockholm Convention are important. For reasons which we will set forth in detail in the working party my delegation is of the opinion that the provisions of article XXIV alone are not fully adequate to cover the Stockholm Convention. The exemption from the free-trade provisions of the EFTA of the entire economic sector of agriculture and the question as to how the third-country trade in agriculture will be affected by bilateral agreements related to the EFTA seem to us to warrant consideration of the Stockholm Convention by the Contracting Parties under GATT procedures other than those set forth in article XXIV.

"I would like to express satisfaction with the declaration in article 37 of the Stockholm Convention which reaffirms the obligations of member states undertaken in the GATT. Also it is reassuring to have the statement contained in the replies from the member states to the questions submitted by contracting parties that member states intend to administer and interpret the origin rules in a liberal spirit. I think it unnecessary to discuss in detail provisions of the Stockholm Convention relating to quantitative import restrictions. My delegation would, however, like to indicate its view that the imposition, maintenance, and administration of quantitative import restrictions for financial reasons should depend exclusively on the balance-of-payments position of individual member states.

"Mr. Chairman, this in brief is a general statement of our views. . . ." (Department of State Bulletin, June 13, 1960.)

### FOOD AND AGRICULTURE ORGANIZATION

#### VESSELS MOST COSTLY PART OF FISHING:

The fishing vessel itself, not its gear or harbors, processing plants, or the stores needed to sell the products produced, is beginning to be the most costly investment of the world's fishing industry. The investment in fishing boats in highly developed countries runs higher than the investment in harbors, canning plants, and retail stores combined.

A survey by the Canadian government in 1958 showed vessels accounted for 67 percent of the total investment in the Canadian fishing industry. This figure is compared with 45 percent in 1917 and 59 percent in 1935.

The following countries accounted for 92 percent of the world's fish catch. Japan, whose 5,399,000-ton catch led the world in 1957, also leads the world in the variety of fishing vessels in use. Japan has 14 individual major types, followed by the U.S.S.R. with 11 and Norway with 10. The United States has 9 different major types. The United Kingdom, Canada, and Iceland list a total of 7 types; Portugal, France, Sweden, and India, 6 each; the Faroes, Germany, the Netherlands, and Italy 5; Denmark, Indonesia, and the Union of South Africa, 4.

The most popular vessel in use is the trawler in one or other of its various forms--35 nations use it. Then comes the drifter, employed by 29 nations, followed by the

purse-seiner used by 26 nations. The troller is used by 12 nations and the whale catcher by 11.

Time-and-motion studies done on board a new \$840,000 German stern trawler show that stern trawling takes less time than side trawling. While trawling is regarded as the most advanced method of fishing, other methods are constantly improving.

Most boats today are still small--between 80 and 90 feet in length and not costing more than \$100,000--and are too heavy. Generally built of wood, they are constructed on the principle of the thicker the timber the safer the boat. Selecting 22 successful fishing vessels in this class, studies were done on the thickness of the boats' timbers and estimates made as to what thickness could have been safely used. Studies published show Danish boats to be 40 percent and Swedish boats 30 percent heavier than necessary. ("Fishing Boats of the World 2," Fishing News, London, England; book based on papers and discussion at Second FAO World Fishing Boat Congress held in Rome April 1959.)

### GENERAL AGREEMENT ON TARIFFS AND TRADE

#### SIXTEENTH SESSION IN GENEVA:

Problems of major importance for the future development of international trade will confront the 42 countries that participate in the work of the General Agreement on Tariffs and Trade (GATT) which convened in Geneva on May 16, 1960. Among the important subjects to be dealt with at the session will be (1) the elimination of quantitative restrictions on imports, (2) the European Free Trade Association, (3) the Latin American Free Trade Association, (4) the avoidance of market disruption caused by sharp increases in imports of particular commodities, and (5) the trade problems of less-developed countries. Harry Shoshan, International Activities Assistant, Technical Review Staff, will represent the U. S. Department of the Interior at the meetings.

During the Sixteenth Session, the convention of the European Free Trade Association (EFTA), which has recently been ratified by Austria, Denmark, Norway, Portugal, Sweden, Switzerland, and the United Kingdom, will be examined. The United States Government together with other contracting parties will consider the convention in the light of relevant provisions of the GATT and seek to assure that the convention will be administered in a liberal manner which guarantees equitable treatment to the trade of countries outside the Association.

Another regional market arrangement, the Latin American Free Trade Association, will also be on the agenda for the session. The arrangement was provided for in the Treaty of Montevideo, signed February 18, 1960, by representatives of four countries which participate in GATT (Brazil, Chile, Peru, and Uruguay) and three which do not (Argentina, Mexico, and Paraguay). It is expected that Contracting Parties will hear a preliminary explanation of the Montevideo Treaty by the signatory countries and that individual countries will indicate their general reactions to the various aspects of the Treaty.

The Contracting Parties decided at their last session, held in Tokyo in November 1959, to study the problem of market disruptions caused by sharp increases of imports over a brief period of time and in a narrow range of commodities. The problem is to find the means to ameliorate the adverse effects of an abrupt invasion of established markets while continuing to provide steadily enlarged opportunities for trade. This problem will be considered at the Sixteenth Session with the help of a factual report which has been prepared on the subject, including a survey of import restrictions which various countries maintain in order to prevent market disruption.

The GATT Committee on Balance of Payments Restrictions holds several series of consultations each year with those countries which still maintain import restrictions to safeguard their monetary reserves. In these consultations, the Contracting Parties examine quantitative import restrictions still in force, their effects, and the prospects for their removal or reduction. The Committee has been an important influence leading to the reduction of quantitative import restrictions, particularly those discriminating against United

### International (Contd.):

States exports. Consultations are being held before and during the Sixteenth Session with Austria, Brazil, Greece, India, South Africa, and Uruguay.

The Contracting Parties will review the reports of the committees which have been studying ways to (1) expand international trade in agricultural (including fishery) commodities and (2) assist the exports of less-developed countries. In addition, the Session will deal with a variety of trade issues, including import restrictions maintained by Italy, Germany, and Belgium; developments within the European Economic Community; reports prepared by panels of experts regarding restrictive business practices, subsidies, state-trading enterprises, antidumping and countervailing duties, and facilities for the temporary admission of professional equipment and packing materials; and a number of other matters in the field of international trade.

\* \* \* \* \*

### UNITED STATES PROPOSES LIST OF FISHERY PRODUCTS FOR NEGOTIATION:

The United States has made public an extensive list of imported commodities, including fishery products, on which it will offer to make tariff concessions in the international negotiations at Geneva in September 1960. At the same time the State Department issued a companion list of products on which the United States will seek foreign tariff concessions to boost United States exports. On May 27, 1960, the United States Government announced its intention to participate in the multilateral trade-agreement negotiations under the General Agreements on Tariffs and Trade (GATT). At the same time, it published two lists and notices concerning the preparatory stages for participation in the negotiations. The lists of products proposed to be considered include certain fishery products and were presented to provide full opportunity for all interested persons to make their views known either through public hearing or in writing, as to whether concessions should or should not be offered by the United States or sought from other countries participating in the conference.

Included among the items on the list are such fishery products as fish and marine animal oils; fresh or frozen swordfish; wolffish (ocean catfish) fillets; dried, salted, and smoked cod; canned smoked sardines valued at over 30 cents per pound; canned herring in tomato sauce, kippered or smoked, in containers with contents over 1-pound each; mild-cured salmon; salted herring; smoked or kippered herring; canned clams (except razor clams and clam chowder); caviar and other fish roe; agar agar; and sodium alginate.

One publication (State Department Publication 6986) contains, in addition to explanatory statements and legal notices, a list of products which the United States may consider as a basis for offering tariff concessions in return for concessions of benefit to the United States export trade as may be granted by other countries. The other publication (State Department Publication 6987) contains a list of products of significance to the United States export trade on which the United States may seek concessions from other countries with the view to increasing export opportunities for United States products.

The actual negotiations, sponsored by the GATT, are scheduled to begin in Geneva, Switzerland,

in September 1960. The conference will be held in two phases, the first concerned with negotiations with the newly-formed European Economic Community (Common Market) and the second, starting January 1961, with an exchange of new concessions between the contracting parties.

These negotiations will be another step in the Government's efforts, through the reciprocal trade agreements program, to promote the expansion of international trade and thereby to foster greater economic strength and solidarity among the nations of the free world.

The lists of products to be considered were issued to provide an opportunity for all interested persons to submit information on whether or not the United States Government should offer or request concessions on individual products. Public hearings before the Committee for Reciprocity Information and the Tariff Commission were scheduled to begin on July 11, 1960. The Tariff Commission in its "peril point" hearing was to investigate the extent to which concessions on listed products may be made without causing or threatening serious injury to domestic industries producing like or competitive products.

Under the Trade Agreements Extension Act of 1958, the President is authorized to enter into trade agreements until June 30, 1962. In negotiating such trade agreements, the President may reduce the United States duties existing on July 1, 1958, to the lowest rate calculated by any of three alternative methods:

1. Reducing the rate by not more than 20 percent, provided that no more than a 10 percent reduction may be made effective in any one year.
2. Reducing the rate by not more than 2 percentage points ad valorem (or its ad valorem equivalent in the case of a specific rate or a combination of ad valorem and specific rates). The reduction in any one year under this alternative may not exceed 1 percentage point.
3. Reducing to 50 percent ad valorem or its equivalent any rate which is in excess of that level, provided that not more than one-third of the total reduction may become effective in any one year.

The President may also agree to "bind" (continue) existing duties or the duty-free treatment for articles on the free list.

The export list was published to obtain the views and supporting information from U. S. exporters concerning additions or deletions, the countries from which concessions should be sought, and the extent of any modification in the customs treatment that should be requested. The possibility of obtaining concessions will depend, in part, on the extent to which the product is supplied or may be supplied by the United States to the country concerned.

The United States expects to negotiate at Geneva with the Common Market, which will represent the six member states (Belgium, France, Germany, Italy, Luxembourg, and the Netherlands), and with Australia, Austria, Canada, Chile, Denmark, the Dominican Republic, Finland, Haiti, India, Israel, Japan, New Zealand, Nicaragua, Norway, Peru, Spain, Sweden, Switzerland, Tunisia, United Kingdom, and Uruguay. Additional countries may, however, decide to participate in the negotiations.

The fishery items proposed to be considered are described in the following tables:

International (Contd.):

Table 1 - List of Fishery Products to be Considered for Possible United States Concession in Duty				
Import Tariff Par.	SCHEDULE A Stat. Class. (1959)	Brief Description	Duty July 1, 1958	U. S. Imports 1959 US\$1,000
5	8350 110	Sodium alginate	$\frac{1}{12\frac{1}{2}}\%$	488
	2260 260	Salts derived from vegetable oils, animal oils, fish oils; animal fats and greases, n.e.s., or from fatty acids thereof	$\frac{1}{12\frac{1}{2}}\%$	17
34	2220 250	Drugs, advanced in value or condition: Shark-liver oil, including dogfish-liver oil	4% plus .85¢ lb.	142
	2220 260	Shark oil, including dogfish oil	4% plus .85¢ lb.	1/
	2220 270	Fish oils, n.e.s. (except cod oil and herring oil, and not including whale oil)	4% plus 1.25¢ lb.	17
	2220 290	Halibut liver oil	5%	10
	2220 300	Fish-liver oils, n.e.s. (except cod-liver oil)	4% plus 1.25¢ lb.	1,563
41	0934 000	Glue, glue size, and fish glue: Valued less than 40 cents per pound	0.5¢ lb. plus 74%	242
		Glue size and fish glue, n.s.p.f.	4¢ lb. plus 124%	7
	2800 000	Agar agar	15%	992
	0941 700	Isinglass	21%	39
52	0803 000	Whale oil:		
		Sperm, crude	1¢ gal.	1,621
		Sperm, refined or otherwise processed	3.5¢ gal.	263
	0803 500	Whale oil, n.s.p.f.	2.5¢ gal. plus 1.25¢ lb.	3
	0808 800	Marine animal and fish oils, n.s.p.f. (except cod, cod-liver, herring, menhaden, cod, and shark oil including dogfish)	10% plus 1.5¢ lb.	6
	0816 000	Seal oil	3¢ gal. plus 1.5¢ lb.	-
	0808 710	Sharkoil, including oil produced from dogfish, n.s.p.f.	4% plus 0.85¢ lb.	-
	0990 100	Spermaceti wax	2.5¢ lb.	39
60	8722 000	Ambergris	10%	16
717(a)	0055 300	Swordfish, fresh	1¢ lb.	1,925
	0055 500	Swordfish, frozen	1.5¢ lb.	947
717(b)	0060 320	Filletted, skinned, boned, sliced, or divided into portions; swordfish	1.5¢ lb.	4,178
	0060 450	Wolfish (sea catfish)	1.5¢ lb.	1,852
717(c)	0062 000	Cod, haddock, hake, pollock, and cusk, dried and unsalted.	5¢ lb.	493
718(a)	0063 560	In oil or in oil and other substances: Sardines, not skinned or boned, smoked, valued over 30¢ per pound	12½%	5,358
		Antipasto, valued not over 9¢ lb.	22%	-
		Antipasto, valued over 9¢ lb.	12½%	204
718(b)	0067 000	Not in oil or in oil and other substances, in airtight containers: Anchovies	12½%	77
		Fish cakes, balls, pudding	5¢	360
		Herring, smoked or kippered or in tomato sauce, in containers with contents, over one pound each	10%	242
719	0068 000	Pickled or salted: Salmon	8½%	7
		Cod, haddock, hake, pollock, cusk, not skinned nor boned, containing not over 43% moisture by weight	0.5¢ lb.	4,363
	0069 900	Cod, haddock, hake, pollock, cusk, skinned or boned	1.25¢ lb.	2,125
	0070 400	Herring, bulk or in containers weighing with contents over 15 pounds each and containing each over 10 pounds of herring, net weight	0.25¢ lb.	3,688
720	0075 100	Smoked or kippered: Herring, whole or beheaded, hard dry-smoked	5¢ lb.	152
		Herring, boned	1.25¢ lb.	199
		Herring, eviscerated, split skinned or divided into portions	1.25¢ lb.	105
		Cod, haddock, hake, pollock, cusk, filleted, skinned, boned, sliced or divided	1.5¢ lb.	680

1/Less than \$500.00.

(Continued on the following page.)

## International (Contd.):

Table 1 - List of Fishery Products to be Considered for Possible United States Concession in Duty (Contd.)				
Import Tariff Par.	SCHEDULE A Sta. Class. (1959)	Brief Description	Duty July 1, 1958	U. S. Imports 1959 US\$1,000
721(b)	0081 500	Clams other than razor clams and clams in combination with other substances (except clam chowder) in airtight containers	20% <sup>2/</sup>	753
721(c)	0078 500	Fish paste and fish sauce	10%	68
721(d)	0079 590	Caviar and other fish roe, except sturgeon, boiled and packed in airtight containers	7½%	35
775	1250 210 (part)	Soups, soup rolls, soup tablets or cubes, etc.	17½%	658
	1250 250 (part)	Pastes, balls, puddings, hash and similar mixtures of vegetables, meat, or fish, n.s.p.f.	21%	14
1519(a)	0737 600	Fur sealskins, dressed	12½%	36
	0737 620	Fur sealskins, dressed and dyed	15%	24
1528		Pearls and parts, not strung or set		
	5953 500	Natural	5%	595
	5953 900	Cultured or cultivated	5%	13,083
1530(c)		Reptilian and shark skin leather		
	0334 000	Upper for shoe purposes	10%	1,364
	0334 100	Other	15%	164
1538	0990 290	Shells and mother-of-pearl, engraved, cut, ornamented or manufactured	15%	332
1540	2950 080 (part)	Moss and sea grass, eel grass, and seaweed, dyed or manufactured, n.s.p.f.	5%	519
1558	2260 240	Fatty acids, n.s.p.f., derived from vegetable oils, animal or fish oils, or animal fats or greases (except from linseed oil)	10%	60
	1190 800	Dogfood, unfit for human consumption	10%	939
1669	2210 980	Drugs of animal origin, not edible, crude, n.e.s. <sup>1</sup> Fish oils, n.e.s. (except cod, herring, and dogfish oil) and fish-liver oils, n.e.s. (except cod-liver, halibut-liver, shark-liver and dogfish-liver oils)	Free plus 1,25¢ lb.	-
1681	0723 500	Seal furs and fur skins, undressed	Free	190
1722	2950 080 (part)	Seaweeds not further manufactured than ground, powdered, or granulated	Free	-

<sup>2/</sup>Based on American selling price.

Table 2 - List of Fish and Fish Products on Which the United States May Seek Concessions from Other Countries

Salmon, frozen, cured or canned
Sardines or pilchards, canned
Mackerel, canned
Cysters, fresh, frozen or canned
Shrimp, fresh, frozen or canned
Fish oils and fats
Fish-liver oils
Fish meal and solubles
Vitamins and viosterols, medicinal fish oils and fish-liver oils and concentrates, including vitamin A and cod-liver oil.
Pearl essence

INTERNATIONAL PACIFIC SALMON  
FISHERIES COMMISSIONARTIFICIAL SPAWNING AREA  
FOR SALMON DEVELOPED:

A new development in the study of artificial measures for producing salmon is being undertaken by the International Pacific Salmon Fisheries Commission. An artificial spawning channel 3,000 feet long and 20 feet wide is now being constructed by the Commission adjacent to Seton Creek near Lillooet, British Columbia. The channel is

expected to substitute for pink salmon spawning areas flooded out by a power company's diversion dam constructed in 1960 on Seton Creek. Land for the project has been made available by the power company. It is estimated that a minimum of 10,000 pink salmon can spawn successfully in the area with at least double the rate of production from spawning in the natural stream below the power dam.

Operations of the Seton Creek spawning channel will be carefully controlled and recorded as to cost and efficiency that comparisons can be made with the operations of the new Pitt River experimental hatchery scheduled for completion in August of this year.

Experimental spawning areas under investigation by the Canadian Department of Fisheries and the Commission since 1953 have proven to be very effective in increasing salmon fry production and the cost of operation appears to be considerably less than for the standard type hatchery.

International (Contd.):

#### OCEANOGRAPHY

#### TO BE ABLE TO FORECAST BEST FISHING AREAS IS AIM OF EUROPEAN OCEANOGRAPHIC-DATA GATHERING SURVEY:

Two marine research vessels sailed from Aberdeen, Scotland, early in June 1960 bound for the Faroes for a week-end rendezvous with seven similar vessels for an international sea science expedition. The expedition is to survey the two-hundred-or-so mile wide submarine ridge between Faroe Islands and Iceland.

Leader of the expedition is head of the hydrographic section of the Marine Laboratory, Torry, Aberdeen. He sailed on the Laboratory's research vessel, Explorer, which was accompanied from Aberdeen by the Royal Research ship Discovery II.

A three-week "top to bottom survey" was planned of the sea ridge by scientists and oceanographers aboard the international fleet of nine research vessels from Russia, Iceland, Norway, Germany, England, and Scotland.

This is the biggest effort of its kind to be staged in the interests of commercial fisheries from a scientific perspective.

The hydrographers and oceanographers will measure the surface, mid-water, and bottom currents as well as internal waves flowing over the ridge, which is a natural barrier between the Arctic and Atlantic oceans.

They will gather samples of the flora and fauna in the overspill and try to photograph the sea bottom, which is 8,528 feet at the deepest point.

The survey is important to all European fishing nations because the cold heavy water on the ridge is believed to have great effects on sea fishing in Northwest Europe.

The scientists will also measure the cold water overspill to test the theory that cold-water currents undermine the warmer waters of the Atlantic, pushing the warmer water nearer to the surface

and the fish food and consequently the fish with it.

If the theory about the effect of cold currents is correct, it may be possible for the "experts" to forecast as much as three years ahead where the best fishing will be.

"We hope to be able to get closer to the answer of the problematical fluctuation of fish breeding," said the leader of the expedition.

The expedition, which took many months to prepare, is a corollary of the polar front survey investigations of the International Geophysical Year. (The Fishing News, June 3, 1960.)

#### TERRITORIAL WATERS

#### BRITISH-NORWEGIAN TALKS MAY YIELD COMPROMISE ON FISHING LIMITS:

It was learned in Oslo on May 29, 1960, that the possibility of a "six plus six" (six miles territorial waters and an additional six miles for exclusive fishing limits) agreement among the Atlantic nations was raised during the Anglo-Norwegian discussions on fishing limits. Foreign trawlers might, however, be allowed to fish within the outer six-mile belt during a ten-year transition period.

This agreement, it is felt, would represent a compromise between the clashing Norwegian inshore and deep-sea fishing interests. It would also be in line with the Anglo-Danish arrangement for the Faroe Islands.

The exploratory discussions which took place between British and Norwegian representatives was followed by an official communique which merely stated that there had been "a free and frank exchange of opinions." It added that there was hope of further talks at a later date.

Norway's intention to extend her fishing limits from 4 to 12 miles had been known by the British Government for a long time, and it became a reality after the failure of the recent Law of the Sea Conference at Geneva.

It means that Britain is now faced with getting a settlement with Norway as well as ending the dispute with Iceland.



## International (Contd.):

Neither Norway nor Iceland is in a position to act promptly, and in Norway the industry is divided on the subject. The distant-water trawling faction in Norway is against the proposal because it is facing increasing prohibitions in foreign grounds. It is the inshore industry, mostly confined to the north, which is demanding a 12-mile limit to preserve its grounds from "foreign invasions." (*The Fishing News*, June 3, 1960.)



## Angola

## FISH OIL EXPORTS:

In 1959, Angola's exports of fish oil were estimated at 8,000 metric tons as compared with 8,500 tons in 1958. Most exports were to West Germany. From year to year Angola's stocks of fish oil are only a few hundred tons. (U. S. Foreign Agricultural Service Report, Leopoldville, April 15, 1960.)



## Austria

## MARINE OIL IMPORTS, 1958 AND 1959:

Total Austrian imports of nonedible marine oils decreased from 769.8 metric tons in 1958 to 551.0 metric tons in 1959. No marine oils were imported from the United States in either 1958 or 1959. (U. S. Foreign Agricultural Service report, Vienna, April 14, 1960.)

Austria's Imports of Nonedible Marine Oils, 1958 and 1959		
Country of Origin	1959	1958
	(Metric Tons)	
West Germany . . . . .	183.9	159.2
Netherlands . . . . .	98.4	6.7
Norway . . . . .	248.0	544.2
Sweden . . . . .	15.3	40.5
Others . . . . .	5.4	19.2
Total . . . . .	551.0	769.8

Marine oils, crude and refined in units of more than one liter, under Austrian Import Customs Tariff Code 15.04 B can be imported free of duty. Liberalization of imports of fats and oils from the dollar area extends to all duty-free items. Thus, the nonexistent imports

from the dollar area are not the result of Government restrictions.



## Belgium-Luxembourg

## MARINE-OIL IMPORTS AND EXPORTS, 1958 and 1959:

In 1959, Belgium-Luxembourg imported 17,906 metric tons of raw and refined marine oils--down about 2.3 percent from 1958. These exports came principally from Japan (8,713 metric tons in 1959 and 10,390 tons in 1958) and from the Netherlands (4,594 tons in 1959 and 3,959 tons in 1958).

Exports, on the other hand, amounted to 783 tons in 1959 and 587 tons in 1958, shipped mainly to the Netherlands, Western Germany, and France. (U. S. Foreign Agricultural Service Report, Brussels, April 27, 1960.)



## Brazil

## FISHING INDUSTRY IN STATE OF SAO PAULO DEVELOPING RAPIDLY:

The Santos Fish Depot, constructed and owned by the Brazilian Government, has been operating on a commercial scale since September 1959, producing 100 metric tons of ice daily and storing up to 450 tons of fish. The Sao Paulo State Government in May 1960 was taking steps to purchase the depot from the Federal Government in 1961 (lease expires March 1961). The decision to purchase the depot indicates the interest of the State Government in developing fishing operations off the coast of Sao Paulo and increasing existing storage capacity. In this respect, the Santos Fish Depot is an important link in the chain of ice-making and fish-storage facilities which are being put up by the Sao Paulo State Government along the coast.

At Ubatuba, a fish depot with capacity to produce 10 tons of ice daily and store up to 10 tons of fish is already operating. At Sao Sebastiao, a depot (to be completed in 1961) is being built to produce 25 tons of ice daily and store 20 tons of fish. A few miles away, at Ilha Bela, an ice-making plant with capacity for 100 tons of ice daily, is under construction. South of Santos, at Itanhaem, is a small depot producing four tons of ice daily and storing up to 10 tons of fish, while further south along the coast, at Iguaçu and Registro, two twin depots, each to produce four tons of ice daily and accommodate up to 10 tons of fish, were due to go into operation in June. In addition, when construction of the projected Centro de Abastecimento (Supply Center) near Sao Paulo is completed in 1962, facilities for making 100 tons of ice daily and storing up to 5,000 tons of fish will then become available.

In 1959 the State Government established the fishery biology service at Santos to study aquatic animals. A research staff from the Oceanographic Institute, the University of Sao Paulo, and the Secretariat of Agriculture, with the assistance of a technician from the Food and Agriculture Organization (FAO), set up a laboratory in the Santos Fish De-

## Brazil (Contd.):

pot and are looking into the abundance of fish and classifying the species in Brazilian waters, the effect of fishing on natural stocks to determine the most effective methods of fishing without endangering the supply, and charting and plotting of currents and tides.

Of importance to the local canning industry is the research work carried out jointly by the Sao Paulo and Federal Governments on the canning of "manjuba" (sard smelts) at a pilot plant at Registro.

The Sao Paulo State Government is concerned about the primitive methods of commercial deep-sea fishing off the State coast. Aside from the Japanese-owned fishery company that operates modern trawlers and fishing equipment, practically all fishermen work on vessels 20 or more years old, and use obsolete and primitive gear. In an effort to renew the existing fishing fleets and render their operation more effective, the State Government is considering financing the purchase of modern vessels and equipment, at a total outlay of 300 million cruzeiros (about US\$1.6 million), the United States Consul at Sao Paulo reported on May 31, 1960.



## Canada

MARINE OIL PRODUCTION,  
FOREIGN TRADE, AND  
CONSUMPTION, 1959:

**Production:** Marine-oil production in Canada from 1957-1959 increased steadily—3.8 million Imperial gallons in 1957; 5.5 million gallons in 1958; 6.0 million gallons in 1959. Herring oil on the west coast and cod oil on the east coast were responsible for the increase in output from 1958 to 1959.

Indications are that marine-oil production in 1960 will be lower due to the tie-up of Canada's west coast herring fishing fleet because of low ex-vessel prices.

Early in 1960, storage facilities for byproducts were taxed to the limit. This, plus low-priced competition from Peru, forced closure of the herring fishery after Christmas 1959.

Table 1 - Canada's Production of Marine Oils, 1957-1959

Type	1959	1958	1957
.... (Imperial Gallons 1/2)....			
<b>Atlantic:</b>			
Cod oil .....	845,323	620,224	823,323
Herring oil .....	n.a.	n.a.	107,900
Other (seal, etc.) ....	453,996	785,185	712,843
Total .....	1,299,319	1,405,409	1,644,066
<b>British Columbia:</b>			
Herring oil .....	4,746,304	4,127,761	2,180,510
Canada Total .....	6,045,623	5,533,170	3,824,576
n.a. - Not available.			
1/One Imperial gallon equals 1.2009 United States gallons.			

**Exports:** Canadian marine oils have enjoyed an export boom over the past three years—climbing from 0.8 million Imperial gallons in 1957, to 1.6 million gallons in 1958, to a new peak of 3.7 million gallons in 1959. Decreasing demand at home has caused Canadian marine oils to seek foreign markets.

In 1957 the United States was the principal buyer of Canada's marine oils. But in 1958 and 1959 the United States has received a smaller proportion of Canada's marine-oil exports each year. Importation of cod-liver oil is the exception since exports of that product to the United States have increased steadily.

Table 2 - Canada's Exports of Marine Oils by Type and Country of Destination, 1957-1959

Type and Destination	1959	1958	1957
..... (Imperial Gallons) .....			
<b>Cod-liver oil,</b>			
<b>pharmaceutical,</b>			
<b>crude and sun rotted:</b>			
United Kingdom .....	103,706	96,974	29,425
United States .....	675,456	443,893	571,585
Other Countries .....	270	-	540
Total .....	779,432	540,867	601,550
<b>Herring oil, industrial:</b>			
United Kingdom .....	2,217,372	298,666	-
Netherlands .....	-	277,733	-
United States .....	58,769	-	20,100
West Germany .....	146,975	162,837	-
Total .....	2,423,116	739,236	20,100
<b>Whale oil:</b>			
United Kingdom .....	189,817	262,888	-
Netherlands .....	98,137	-	-
France .....	-	-	720
United States .....	66,020	87,290	193,312
El Salvador .....	84,870	-	-
West Germany .....	60,500	-	-
Total .....	499,444	350,178	194,032
<b>Fish oils, other:</b>			
Alaska .....	-	400	63
United States .....	511	4,676	33,347
Other Countries .....	8	2	7
Total .....	519	5,078	33,417
Canada Total .....	3,702,511	1,635,359	849,099
Total marine-oil exports to United States & Alaska ..	800,756	536,259	818,407

**Imports:** Canadian marine-oil imports continue to fluctuate. Imports amounted to 0.4 million Imperial gallons in 1957, increased to 1.4 million gallons in 1958, and fell sharply to 0.7 gallons in 1959.

Some cod-liver oil imported by Canada came from the United States, but those imports dropped from 537 gallons in 1957, to 11 gallons in 1958, and to an insignificant amount in 1959. The United Kingdom was Canada's principal supplier of cod-liver oil during the 1957-59 period.

Imports of whale and sperm oil from the United States have steadily increased from 1,118 gallons in 1957, to 10,119 gallons in 1958, and to 19,783 gallons in 1959. On the other hand, both the United Kingdom and Norway have been shipping less whale and sperm oil to Canada. The bulk of the other fish oils were imported from the United States.

**Consumption:** Marine oils in Canada are used principally in margarine and shortening. But this type of use in 1959 hit a six-year low (table 4). The use of substitutes for ma-

## Canada (Contd.):

Table 3 - Canada's Imports of Marine Oils by Type and Country of Origin

Type and Origin	1959	1958	1957
.... (Imperial Gallons), ....			
<b>Cod-liver oil:</b>			
United Kingdom .....	218,698	225,883	96,454
Iceland .....	-	1,087	-
Norway .....	7,355	4,100	25,040
Netherlands .....	3,074	-	-
United States .....	-	11	537
Total cod-liver oil ...	229,127	231,081	122,031
<b>Fish oil, unclassified:</b>			
Japan .....	18,267	25,178	21,311
Norway .....	758	9,570	-
United States .....	379,862	1,375,162	280,563
Total unclassified ...	398,877	1,409,910	301,874
<b>Whale &amp; sperm oil:</b>			
United Kingdom .....	4,223	7,169	8,203
Norway .....	7,058	3,857	15,176
United States .....	19,783	10,199	1,118
Total whale & sperm oil .....	31,064	21,225	24,497
Total all marine oils .	659,068	1,662,216	448,402
Total United States ...	399,635	1,385,372	282,218

rine oils in the production of margarine and shortening is mainly responsible for this decline. In margarine production, soybean and cottonseed oil as well as lard are displacing marine oil, while in the making of shortening, animal fats now predominate.

Smaller quantities are used in paints, varnishes, and lacquers--327,000 pounds in 1956 and 388,000 pounds in 1957. Still smaller quantities are used in the soap and washing compounds industry--8,355 pounds in 1957. (Data on use in paint and soap industries for 1958 and 1959 not available to date.)

Table 4 - Canada's Consumption of Marine Oils in Margarine and Shortening, 1957-1959

	1959	1958	1957
..... (1,000 Lbs.) .....			
<b>Margarine:</b>			
Production .....	152,472	145,607	130,645
Marine oils used .....	12,776	19,806	17,070
Percent .....	8.3	13.6	13.0
<b>Shortening:</b>			
Production .....	160,077	163,288	152,047
Marine oils used ...	5,061	16,741	26,377
Percent .....	3.1	10.2	17.3

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### ONTARIO FISH LANDINGS DOWN SHARPLY FIRST QUARTER OF 1960:

The preliminary estimate of commercial fish production for the first quarter of 1960, by the Ontario Department of Lands and Forests, shows 827,000 pounds reported for the Province with a value of

the fishermen of C\$115,000. This represents a decrease of 71 percent from the 2,891,000 pounds reported for the first quarter of 1959.

The drop in Lake Erie commercial landings, resulting from a late start in March, accounted almost entirely for this decrease. Production of all species was down from 1,994,000 pounds for the first three months of 1959 to 177,000 pounds worth C\$23,000 for the first quarter of this year. Perch was down from 1,247,000 pounds to 94,000 pounds; white bass from 283,000 pounds to 4,000 pounds; sheepshead, from 178,000 pounds to 8,000 pounds; and yellow pickerel from 183,000 pounds to less than 1,000 pounds. Smelt production increased slightly to 71,000 pounds.

Not included in the January-March 1960 production of commercially-licensed fishery operations, experimental trawling gear operated by the commercial fishermen landed an additional 547,000 pounds of smelt from Lake Erie.

Production reported for the northern inland waters dropped 6 percent to 423,000 pounds valued at C\$50,000 to the fisherman. Yellow pickerel was down from 112,000 pounds to 94,000 pounds; whitefish from 70,000 pounds to 49,000 pounds; and northern pike from 103,000 pounds to 92,000 pounds.

Lake Ontario landings fell from 288,000 pounds to 116,000 pounds, valued at C\$23,000. Carp dropped 77 percent to 48,000 pounds; and whitefish decreased from 24,000 pounds to 13,000 pounds. Yellow pickerel landings gained slightly to 27,000 pounds.

In Lake Superior over-all production decreased nearly 50 percent to 47,000 pounds. Of this 31,000 pounds was herring; 8,000 pounds yellow pickerel; and less than 1,000 pounds lake trout.

Production in other areas was: Southern inland waters 35,000 pounds; North Channel 13,000 pounds, and Lake Huron 2,000 pounds; no production was reported for Georgian Bay, the United States Consul in Toronto reported on June 21, 1960.

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Canada (Contd.):

#### **PROGRESS IN OYSTER REHABILITATION ON EAST COAST:**

With regard to the problems which have beset the oyster industry in the Maritime Provinces of Canada, in particular the epidemic disease which by the end of 1958 had ravaged almost all the main oyster areas in New Brunswick and Nova Scotia, good progress was reported at the final session of the Federal-Provincial Atlantic Fisheries Committee, early in May 1960 in Ottawa.

In 1959, test lots of oysters indicated no further spread of the mortality.

The Canadian Department of Fisheries 1959 transplant of disease-resistant oysters from Prince Edward Island proceeded as planned. A total of 3,200 barrels of the disease-resistant oysters were transplanted in New Brunswick and Nova Scotia, and it is expected that the full program of transplanting 10,000 barrels will be completed this year. In all areas examined, the transplanted oysters suffered only normal mortality or less, and continuing good growth was demonstrated.

The Department is intensifying its efforts to develop a method of raising seed oysters to stabilize the industry. In this project, 40,000 cement-coated egg-case fillers were suspended in various Maritime areas. Growth was excellent, with a harvest of 600 barrels of oyster spat. In its seed-farming work a mechanical digger using an escalator principle, which had been tested for clams and modified for oyster work, was used successfully.



#### **Ceylon**

#### **JAPANESE ENGINEERS REPORT ON FISHING PORTS:**

The team of Japanese harbor engineers who visited Ceylon in February 1960 at the request of the Government of Ceylon, has completed its report on the potential development of a network of small fishing ports in that country. The report is not yet available, but it is

understood that the locations recommended as feasible are: Mutual, Galle (east and west), Trincomalee, Jaffna, Kalpitiya, Negombo (two ports), Point Pedro, Mannar, Puttalam, Beruwela, Tangalle, Hambantota, Arippe, Batticalles, and Chilaw.

Much emphasis was laid on the development of the fishery industry in the Ten Year Plan which incorporated the recommendations of another Japanese team's report made in 1958. Construction of ports and shelters are a primary concomitant to the introduction of the large number of mechanized fishing craft recommended, but implementation will be slow because of financial limitations. (United States Embassy, Colombo, June 3, 1960.)



#### **Chile**

#### **FISHING INDUSTRY GRANTED SPECIAL CONCESSIONS:**

The Chilean President (Decree Law No. 266 of March 31, 1960) authorized special concessions and exemptions for individuals or companies engaged in any phase of the fishery industries. The decree law was published in *Diario Oficial* 24,613, April 6, 1960, and became effective with publication. Concessions and exemptions granted under this decree-law may not extend beyond December 31, 1973.

The decree law applies only to those legal entities or individuals exclusively engaged in one or more of the following: (1) extraction, fishing or hunting of marine resources; (2) freezing, conservation, elaboration or transformation of marine resources; (3) construction or repair of industrial or commercial fishing boats.

Time devoted to construction and manufacture of equipment, accessories, and materials for own use will be considered as within these activities.

Concessions and exemptions authorized to entities or individuals engaged in one or more of those activities are:

(1) A 90-percent reduction in taxes on profits and earnings including dividends distributed to stockholders or partners. Personal Tax (Global Complementario) or additional tax on such income will be reduced to one-tenth, i.e. by 90 percent.

(2) A 90-percent reduction in real estate tax and all taxes, contributions, surcharges, duties or charges levied on land, buildings, constructions, installations, and expansions destined for the direct use of one or more of such activities. The same concession is applicable to construction contracts, approval of plans, and to permits relative to those activities, and to rental, grant, or use of

## Chile (Contd.):

state land, beaches, shore land, and water area or sea floor.

(3) Exemption from all taxes effecting distribution, sale, or purchase of: (a) fresh, frozen or canned fish, whales, shellfish, crustacean, and other marine resources except oysters, lobsters, crabs, and sea urchins; (b) fish meal, whale meat and bones, and fish oil.

(4) Exemption from tax established by Law No. 12,120<sup>1</sup> of purchase contracts covering the following: marine motors and cargo hoists; fuel and lube oils; machinery, spare parts and accessories; cold-storage plant equipment and machinery, spare parts and accessories; freon gas; cold-storage units for exhibition and sale of seafoods; tin plate and containers; sheets and other steel products for use in construction or repair of fishing boats; nets, string, sisal or other ropes; cables, flexible or rigid, galvanized or not; and navigation and fishing equipment.

(5) Exemption from "cifra de negocios" tax (sales tax) on contracts covering construction, repair, and rental of fishing boats, manufacture of containers for fish products, and water and electric power for specified industrial activities.

(6) Exemption of seal and stamp tax on public deeds relative to formation, modification, reorganization, capital increase or expansion of companies engaged or to engage in one or more of the specified activities related to the fisheries industry.

(7) To classify as a capital increase rather than income differences in value derived from damage fire and indemnization in cases of shipwreck, disaster, or other risks, loss, abandonment, boarding of ship, salvage, or through transfer of goods, provided such funds are invested within three years in renovation, repair, or expansion of the industry.

(8) Exemption of fishing boats from cabotage fees and taxes, lighthouse and buoy contributions, and other maritime fees applicable to them. Fishing products and boats will be granted special tariffs which will be no more than 50 percent of existing rates on port charges, docking, use of wharves, freezing plants, radio equipment, and naval aids.

(9) Profits withdrawn from a business subject to third or fourth category income tax (Clause 12, Article 48 b of Income Tax Law) and invested in one or more of the specified fisheries activities may be excluded for the purpose of Personal Income or Additional Tax. However, should these funds be withdrawn before five years from date of capitalization they will become subject to tax.

(10) Exemption from import duties, statistics, ad valorem, storage, and all taxes and charges and consular fees and any other contribution, deposit or guarantee on the following imports: fishing boats of over 10 tons; machinery for exclusive use of fisheries industry; nets; completely equipped refrigerator boats, cars or trucks; ma-

rine motors and winches; and equipment parts and accessories for fisheries industry.

(11) The same exemptions will be granted the following imported products if authorized by the Foreign Exchange Commission on basis of a recommendation from the Direccion General de Produccion Agraria y Pesquera and a statement from the Ministry of Economy which certifies that the merchandise is not produced in the country in adequate quantity, and quality at reasonable prices: all types of petroleum, combustibles and lubricants for fisheries industry; equipment, machinery, and units for freezing plants, parts, and accessories; special refrigerator equipment, machines, and units for exhibition and sale of frozen seafoods; tin plate with protective varnish coating, printed or not, for use in export of fish products; tackle, strings, and ropes of natural or synthetic fiber, cables, flexible and rigid, galvanized or not; and navigation and fishing aids.

To enjoy the concessions and exemptions authorized by Decree Law No. 266, companies or individuals must register in the "Rol de Industrias Pesqueras, Anexas y Complementarias" maintained by the Direccion de Produccion Agraria y Pesquera, Ministry of Agriculture. Conditions and requirements for registration will be established by Regulation.

Such companies or individuals for the first 10 years must capitalize no less than 75 percent of profits by investment in development of said industry, financing other related activities, or construction of workers' housing. The ten-year period will begin with the first fiscal year following the granting of the privileges, and the form and conditions by which this requirement must be carried out will be established by Regulation.

The decree granting the privileges authorized by Decree Law No. 266 to an individual or company will be made a public deed and will include the capitalization program and *modus operandi* for the investment referred to above.

Fishermen's cooperatives, with recommendation of Direccion General de Produccion Agraria y Pesquera and the Departamento de Cooperativas de Ministerio de Economia may be granted the privileges authorized by this decree even though not dedicated to the lines of business specified, provided the members are engaged in these activities.

Machinery, equipment, and materials imported free of duty and other charges or under contracts exempt from tax established by Law 12,120 may not be sold or transferred as to domain, use, possession or simple holding without prior authorization of the Direccion General de Produccion Agraria y Pesquera. Finished products, to be defined by regulation, may be sold without prior authorization.

The President may revoke at any time the decree granting these privileges if, in his judgement, any act may have been executed which constituted an infraction of the 10-year capitalization program, sale or transfer of machinery equipment and materials, or one or more of the requisites specified. Companies or individuals so affected must pay all taxes, duties, surcharges, contributions and other

<sup>1</sup>/Law 12,120 of September 7, 1956, published *Diario Oficial* 23,586 of October 30, 1956, established a tax on purchase sale and barter exchange of certain products. The amount of the tax varies with the various articles specified in the law.



## Chile (Contd.):

charges from the date on which the exemptions were in force, without prejudice to the sections that might be applied.

Decree Law No. 266 met with general approval and is considered by the industry to give fisheries operations in Chile a new lease on life. The concessions and tax exemptions granted by the Decree Law, together with the loan program announced by Corporacion de Fomento de la Produccion will enable the various phases of the industry to round out its organization to permit profitable commercial operations. Capital has been spread thin in most of the industry and the fleet, particularly, is inadequate to support industrial plants. The 13-year period of tax relief will permit the companies and individuals to weather the off-years and build up their working capital, the United States Embassy in Santiago, reported on June 11, 1960.

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### INCREASED FISH-MEAL PRODUCTION BOOSTS EXPORTS:

In 1959 Chilean fish-meal production increased by 1,692 metric tons. Production in 1959 was 20,200 tons as compared with 18,508 tons in 1958.

Chile's Fish-Meal Production, Exports, and Consumption, 1957-1959			
Item	1959	1958	1957
	..... (Metric Tons) .....		
Production	20,200	18,508	16,260
Exports	7,000	4,640	4,506
Domestic consumption	13,200	13,868	8,015

Table 1 - Ecuador's Imports of Marine-Animal Oils by Country of Origin, 1957-1959

Commodity and Country	1959 <sup>1/</sup>		1958 <sup>2/</sup>		1957 <sup>3/</sup>	
	Pounds	US\$	Pounds	US\$	Pounds	US\$
<b>Cod- or Shark-Liver Oil:</b>						
United States	1,675	1,017	4,015	566	3,137	1,627
United Kingdom	2,125	507	3,999	681	12,826	2,595
West Germany	672	128	220	35	220	37
Norway	25,146	3,768	62,214	9,051	37,771	5,877
Costa Rica	-	-	2	3	-	-
Italy	7	4	-	-	-	-
<b>Total</b>	<b>29,625</b>	<b>5,424</b>	<b>70,450</b>	<b>2/10,336</b>	<b>53,954</b>	<b>3/10,136</b>
<b>Sperm-Whale Oil:</b>						
West Germany	132	44	1,113	376	496	197
United States	236	73	201	102	-	-
<b>Total</b>	<b>368</b>	<b>117</b>	<b>1,314</b>	<b>478</b>	<b>496</b>	<b>197</b>
<b>Total All Oils</b>	<b>29,993</b>	<b>5,541</b>	<b>71,764</b>	<b>10,814</b>	<b>54,450</b>	<b>10,333</b>

1/Revised.

2/Preliminary.

3/Includes body and liver oil.

Notes: Values converted at rate of 15.00 sucres equal US\$1.

Because of a decreased demand at home (13,868 tons were consumed in 1958 as against only 13,200 tons in 1959), the excess production was exported. Exports in 1959 increased 2,360 metric tons--from 4,640 tons in 1958 to 7,000 tons in 1959. Exports for calendar year 1958 to the United States (the best customer for Chile's fish meal) were 2,101 tons, while during the first eight months of 1959 exports totaled 2,193 tons. This means that total 1959 exports to the United States will be considerably greater than 1958. Exports to West Germany totaled 1,508 tons in 1958 as compared to 1,757 tons for only the first eight months of 1959. Holland in 1959 also became an important outlet for Chilean fish meal.

A United States company has brought three fishing vessels to Chile to conduct a training program for fishing captains in new methods used in locating and catching fish. The United States Operation Mission in Chile is participating. The President of the company has one of the boats fishing and its catches have been satisfactory in spite of bad weather. The training program was expected to get under way shortly.

Chile has 29 fish-meal plants, none of which have an adequate supply of raw fish to maintain plant production at a third of plant capacity. (U. S. Foreign Agricultural Service Report of April 25, 1960, and United States Embassy report of May 20 from Santiago.)



## Ecuador

### IMPORTS AND CONSUMPTION OF MARINE-ANIMAL OILS:

**Imports:** Imports of marine-animal oils into Ecuador rose sharply from 1957 to 1958, but declined rapidly in 1959. Decreased amounts of liver-oil imports from Norway in 1959 were mainly responsible for the decline. Liver-oil imports alone, from the United States, followed the same pattern, increasing in 1958 and dropping off in 1959.

It is expected that total imports of fish oil, including body and liver oil, should increase to 35,274 pounds in 1960. An increase in total sperm-whale oil imports is also anticipated--from 368 pounds in 1959 to 882 pounds in 1960.

**Consumption:** The consumption of fish oil (about 51,000 pounds in 1959), including body and liver oil, in Ecuador is maintaining a fairly steady level, with a maximum fluctuation of about 4,000 pounds during the period 1958 through 1960. Sperm-whale oil consumption decreased from 1958 to 1959, but a partial recovery is anticipated in 1960. (U. S. Foreign

## Ecuador (Contd.):

Table 2 - Ecuador's Consumption of Marine-Animal Oils, 1958-1960

Species	1960 <sup>1/</sup>	1959 <sup>2/</sup>	1958 <sup>3/</sup>
Fish oil <sup>4/</sup> . . . . .	48,501	50,706	46,297
Sperm whale oil . . . . .	882	441	1,433
Total . . . . .	50,706	51,147	47,730

<sup>1/</sup>Forecast<sup>2/</sup>Preliminary<sup>3/</sup>Revised<sup>4/</sup>Includes body and liver oil.

Agricultural Service Report, Quito, April 19, 1960.)



## French West Africa

TUNA FISHING SEASON 1959/60  
ENDS WITH RECORD LANDINGS:

The French West African (Senegal) 1959/60 albacore tuna fishing season, which began on November 1, 1959, closed on April 30, 1960, with record landings of 17,500 metric tons. This amount exceeded the goal of 16,000 tons by about 9.4 percent. During the season 57 tuna clippers participated in the fishery.

The tuna landings were utilized as follows: 6,500 tons were canned for export to the French market; 3,000 tons were sold for export to a large United States west coast tuna canner; 3,000 tons were sold to Italy; and the balance of 5,000 tons are due to be shipped to France for processing.

Despite the good season, the Dakar canneries were not in a very favorable world competitive position, as can be seen by the fact that France had agreed to purchase 750 additional tons of canned tuna if the canneries were able to sell another 750 tons for export elsewhere above commitments already made, which they were unable to do. An official in the Fisheries Division of the Senegalese Ministry of Rural Economy stated that there are several factors which account for this. The most important is the high operating cost of the canneries. Other factors are the cost of electricity, which is 8 times as much as in France; relatively low productivity; labor, which is paid higher wages than similar Japanese and Spanish workers in fish canning; European supervisors and technicians, who are paid high salaries, and are needed to run the canneries; most of the processing equipment must be imported; and the use of relatively high-priced locally-produced peanut oil. Other considerations are high freezing costs, and high storage and transportation fees.

The Government and private industry have been drawing up plans to lower the high canned tuna production costs by such things as the "California" type factory. The newly-created Fisheries Council had its inaugural meeting on April 29, 1960, and discussed the 1960 tuna campaign, the creation of a company to study the construction of a large capacity cannery, the utilization of the port freezing facilities, and the fish trade in general. The Council also decided to create a Commission to deal with fiscal matters relating to fisheries, trawling, tuna markets, improved native fishing equipment, the creation of a School of Fisheries, and the commercialization of locally-canned products.

The rapid growth of the tuna industry in Dakar is reflected by the annual tonnage increase. In the 1954/55 season only 400 tons were landed. This amount increased to 1,400 tons in 1955/56, to 7,000 tons in 1956/57, 11,000 tons in 1957/58, 12,000 tons in 1958/59, and jumped sharply to a total of 17,500 tons for the past season.

The number of tuna clippers rose from 5 in the 1954/55 season to the present figure of 57. However, it should be noted that the clippers were carefully chosen for the task before being permitted to start in the fishery. This would account for the successful 1959/60 season despite unfavorable weather conditions. Also, the Senegalese Government reportedly made a great effort at restricting the number of boats coming here from France after the bad experience of the 1957/58 season. At that time, over 90 clippers came and flooded the French market with tuna, and much could not be sold.

The price of whole tuna rose from about US\$128.64 per short ton to about US\$169.10 a ton landed in Dakar during the 1959/60 season. However, the top price of \$213.20 a ton was reached in the 1957/58 season, the United States Consulate in Dakar reported on May 12, 1960.



## German Federal Republic

FISH-MEAL PRODUCTION UP  
DESPITE HEAVY IMPORTS:

West Germany's production of fish meal increased 13,000 metric tons in 1959. Production of fish meal (made mostly from sand lance) was up 11,000 tons and herring meal up 3,000 tons. Cod meal, however, was down 1,000 tons.

In 1959, sea and coastal waters yielded 156,000 tons of fish as raw material to 22 plants for the production of fish meal and oil—43,500 tons more than in 1958. Sand lance ("mainsprierling") and herring comprised the bulk of the raw material. Whole fish, however, accounted for only 37 percent of the raw material in 1959; fish waste was the principal source of supply for fish-meal factories. Sand-lance production (caught only for reduction purposes) rose from 52,621 tons in 1958 to 58,842 tons in 1959. Since the sand-

Table 1 - German Federal Republic<sup>1/</sup> Fish Meal Production, Type and Quantity, 1958-1959

Type	Quantity	
	1959	1958
..(1,000 Metric Tons)..		
Cod meal <sup>2/</sup> . . . . .	15	16
Herring meal <sup>2/</sup> . . . . .	21	18
Fish meal <sup>3/</sup> . . . . .	53	42
Other meal <sup>3/</sup> . . . . .	4	4
Total . . . . .	93	80

<sup>1/</sup>Including West Berlin; Saarland included since July 1959.<sup>2/</sup>Requirements

	Minimum (%)		Maximum (%)	
	Protein	Ca Phosphate	Yan	Salt
Cod meal . . . . .	60	18	8	8
Herring meal . . . . .	55	8	12	8
Fish meal . . . . .	55	15	8	8

<sup>3/</sup>Including production lines shrimp.

Table 2 - German Federal Republic Supply and Distribution of Fish Meal

	1959	1958
..(1,000 Metric Tons)..		
Stocks beginning of year . . . . .	2	1
Production . . . . .	93	80
Imports . . . . .	156	133
Total supply . . . . .	251	214
Exports <sup>1/</sup> . . . . .	8	4
Domestic consumption . . . . .	337	208
Stocks end of year . . . . .	6	2

<sup>1/</sup>Includes exports to Soviet Zone of Germany: 1959, 7,000 tons; 1958, 2,000 tons.

### German Federal Republic (Contd.):

launce season occurs at the time when raw material from other sources is scarce, it helps to level off season fluctuations in the fish-meal industry.

In addition to fish meal, the same factories produced 19,002 tons of fish body and liver oils in 1958 and 24,325 tons in 1959.

During 1959 the fish-meal market was dominated by large and cheap imports from Peru; in fact, three-fifths of the imports were Peruvian. This abundant supply caused a sharp decline in prices which continued from May of 1959 into March 1960. (U. S. Foreign Agricultural Service Report of April 14, 1960, from Bonn.)

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### KNOT FREE TRAWL NET IN PRODUCTION:

A firm in Bremerhaven, West Germany, has begun production of a knotless ocean fish trawl net. The Director of the German Institute for Gear Research in Hamburg had good experience with the trawl when it was tested on the research vessel Anton Dohrn during a trip to the Barents Sea.

The factory began its experiments in the manufacture of a knotless trawl in 1955. While the Japanese machinery for producing knotless gear has not been able to guarantee uniform mesh widths, the German firm has succeeded in mastering this problem. It adapted a machine now used for the manufacture of curtains, shirts, upholstery material, etc., to plait or braid threads together in the same manner as curtains to produce a knotless fish trawl in only three hours. The method already has been patented, according to the report in Fiskaren, a Norwegian fishery trade periodical, of June 8, 1960.



### Guatemala

#### JAPANESE FISHING COMPANY TO TRAWL FOR SHRIMP IN JOINT VENTURE:

A Japanese fishing company is to trawl for shrimp in partnership with interests in Guatemala. The shrimp resources of Central America are said to be the world's richest, and Mexico to the north and Panama to the south are noted for their shrimp fisheries. In the past 2 or 3 years the shrimp resources

off these two countries have been declining, and the shrimp fishing vessels of the Central American coast are congregating on the east coast of Guatemala.

At present Guatemala does not have any large-scale fishery facilities, but it has been found that the coast around San Jose has possibilities as a rich shrimp ground. The Japanese company is sending the chief of its planning section to Guatemala to prepare for entering this promising fishery. The company will complete business arrangements by the beginning of the shrimp fishing season in November and will send one of its trawlers for experimental fishing. Of the Japanese company's eight medium-size trawlers, two are oil-burning steamboats. These boats are unable to compete in the East China Sea grounds with modern Diesel boats, and the company sees the Guatemala venture as a way of using them. The company is planning on gross sales of about 800 million yen (US\$2.2 million) annually.

On the San Jose coast of Guatemala white shrimp are found in shallow waters, while brown shrimp are taken in waters about 20 fathoms deep. The shrimp are frozen and shipped to the United States. (The Suisan Keizai, May 22, 1960.)



### Iceland

#### FISHERY TRENDS, 1959:

Landings: Icelandic fishery landings in 1959 for all species were considerably higher (up 11.8 percent) than in 1958--364,407 metric tons for 1959; 505,038 metric tons for 1958.

The rich ocean perch grounds which had yielded so much to the Icelandic fishing fleet earlier in 1959 began to fall as the year wore on. Lacking discoveries of new banks, the ocean perch catch during the last quarter of 1959 trailed off to 13,692 metric tons, compared with 46,664 tons for the same quarter of the preceding year. However, at the end of the year there was a revival in ocean perch fisheries when 6 or 7 Icelandic trawlers, following up on the findings of two West German trawlers, harvested good catches from new ocean perch beds off Newfoundland. Part of the decrease in the ocean perch fishery, however, was accounted for by a shift to the cod fishery. Record prices were received for landing iced fish, mostly cod, in Hull and Grimsby, England.

Although there was some increase in the amount of herring landed off the south coast, the quality of the herring was not up to that of the preceding year's. Contracts for salted south coast herring deliveries to Eastern Europe were not as great as for the preceding year. In September and October the herring catch was generally very poor and the quality low. Then in early November there was a large run of her-

## Iceland (Contd.):

meal prices as a result of large exports of Peruvian and West African meal. There was a backup of Icelandic sales in the United States of frozen fish blocks and fillets commencing in the fall of 1959. This has resulted in a smaller part of the frozen pack being prepared for the United States market.

**Foreign Trade:** The largest item in Icelandic exports to the Soviet Union consisted of frozen fish fillets: in 1959 28,800 metric tons compared with 25,416 metric tons in 1958. The 1957-59 protocol of the Soviet Trade Agreement called for 32,000 metric tons of fish fillets. Early in 1959 Icelandic exporters reduced this amount tentatively to 26,000 metric tons. The extraordinarily good catch led to subsequent efforts, partly successful, to have the amount under contract increased. The Soviet Union turned out to be by far the largest buyer of salted herring during 1959, taking 12,384 metric tons out of total exports amounting to 27,296 metric tons. Soviet purchases of salted herring were about the same as during 1958, 12,177 metric tons out of total exports of 30,523 metric tons. One of the principal declines registered in exports to East Germany was for salted herring. Whereas nearly 5,000 metric tons of salted herring had been exported to East Germany in 1958, only 778 metric tons were exported in 1959. The value of Polish imports of frozen fish fillets in 1959 came to only a fifth of those in 1958, ring around the Westman Islands. However, this herring was not of high enough quality to use for salting. Part was used for bait; the greater part went for meal and oil production. The bulk of the fall herring catch occurred in December off the west coast of Iceland. A delay in salted herring deliveries to the Soviet Union ensued, not only due to the lateness of the herring season and a strike of the salters, but difficulties in getting laborers over the Christmas season. A relatively high proportion of the 1959 south coast herring catch went for freezing and reduction as compared with 1958. In spite of mounting stocks of herring meal and oil, a larger percentage of the catch went for meal and oil uses than in the 1958 period. There was also a considerable upswing in the amount of herring diverted to reduction during the north coast summer herring season, when 79 percent of the 1959 summer herring catch had gone for reduction as compared with only 44.1 percent in 1958.

**Marketing:** An interesting development during the last quarter of 1959 was the increase in Icelandic deliveries of iced fish (largely cod) to the ports of Grimsby and Hull, England, despite difficulties closer to home with the so-called "cod war." During October only two trawlers discharged their catches of iced fish in Grimsby. A third, the *Hardbakur*, was called away when the Union of Dock Workers there refused to discharge the vessel because of antagonistic feeling. However, this labor union was overruled by the Labor Federation and the action was opposed by the British Trawler Owners, as contrary to the 1956 fish landing agreement with Iceland. Landings increased during the quarter and in several cases the Icelandic ships received almost twice as much per kilogram of landed fish in England as they received in Germany: ranged in December 1959 from 2.07 kronur to 3.02 kronur per kilogram (5.8-8.4 U. S. cents a pound) in Germany, whereas in England they received during the same month from 2.35 kronur to 4.64 kronur per kilogram (6.6-12.7 cents a pound).

The value of fish on ice exported (includes direct landings by Icelandic fishing vessels at British and German ports) from Iceland during 1959 was about 26 million Icelandic kronur (US\$1,699,000) as compared with 17 million Icelandic kronur (US\$1,046,000) for the year 1958. The value of Icelandic iced fish landings in Great Britain rose from 7.6 million Icelandic kronur (\$467,000) in 1958 to 10.6 million Icelandic kronur (\$652,000) during 1959 with the larger part sold in November and December 1959. Corresponding figures to West Germany were respectively 9.9 million and 15.8 million Icelandic kronur (\$609,000 and \$972,000).

Year-end carryover stocks of fish products amounted to some \$16.8 million in foreign exchange value. They were approximately 46 percent higher than at the end of 1958. This increase was largely made up of undisposed stocks of herring oil and meal. A large part of these 1959 stocks of oil and meal have now been sold, but large stocks of fish meal and oil are piling up again. The delay in meal sales was occasioned by a general world depression of herring

Growing consumption in the United States of Icelandic fish fillet blocks and frozen fillets played a large part in increasing exports. Last year's cut in the United States tariff on frozen fish blocks of almost 50 percent undoubtedly played a role in increasing these exports during the latter half of 1959. Exports of fish fillets to the United States rose from 18,191 metric tons in 1958 to 21,727 metric tons in 1959, which is reported to be a record. On the other hand, the United States dropped off sharply as an importer of Icelandic salted herring having purchased 366 metric tons from Iceland in 1958, but only 22 metric tons in 1959. The value of United States imports of cod-liver oil rose from 3.5 million kronur (US\$215,250) in 1958 to 4.2 million kronur (\$256,300) in 1959. Exports to the United States of frozen shrimp and lobster rose from 2.5 million (\$153,800) in 1958 to 3 million kronur (\$184,500) in 1959.

Other exports to the United States included canned fish, fish roe, and salted cod.

Icelandic exports to West Germany dropped considerably. The main items of decline in exports to West Germany consisted of fish meal and herring and other fish oils, items prominent in the carryover. Exports of fish meal to West Germany dropped from 26.7 million kronur (\$1,642,000) in 1958 to 7.1 million kronur (\$436,000) in 1959, while ocean perch meal exports declined from 15.8 million (\$971,700) to 3.1 million kronur (\$190,700). (U. S. Embassy dispatch from Reykjavik, May 13, 1960.)

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## FISHERIES TRENDS, MAY 1960:

The Icelandic winter cod-fishing season ended in mid-May and proved to be very favorable in all parts of the country.

The summer herring season was due to start at the end of May. On May 23, the management of the State herring factories and the Fishing Vessel Owners Association proposed to the Minister for Fisheries a price for herring for reduction of 110 kronur per 75 kilograms (about US\$35 a short ton at exchange rate of 38 kronur to US\$1). This price is 10 kronur under the 1959 price. The reduction in the price of herring for reduction is due to the drop in herring meal prices by 35 to 40 percent from last year. The new price for the raw fish is reportedly greater than the processors would obtain for the finished product on world markets today.

Sales of salted herring were good and advance orders total about 220,000 barrels. It is expected that the price for herring for salting will increase slightly over last year's.

What was expected to be a good lobster season also began in May off the south coast of Iceland.

The first two days of the whaling season started auspiciously May 23 and 24 with the landing of 13 whales.

## Iceland (Contd.):

It was reported that the Norwegians engaged in seal hunting off the north-west coast of Iceland were earning good money. (U. S. Embassy in Reykjavik, May 27, 1960.)

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# ICELANDIC FREEZING PLANTS CORPORATION HOLDS ANNUAL MEETING:

On May 25, 1960, the Icelandic Freezing Plants Corporation, which exports 80 percent of Iceland's frozen fish, convened its annual meeting. Proposals before the group highlighted export policy.

One of the most important of the 18 proposals was to use up to 2 percent of the "free on board" value of fish shipments for developing new markets, including advertising cost.

Another was related to the long-standing project to construct a storage and processing plant in the European Common Market area. This specifically called for approval to take a foreign loan of US\$400,000.

A third proposal sought authority for establishment of three research laboratories in coastal Icelandic towns. (U. S. Embassy in Reykjavik, May 27, 1960.)



## Iran

# SHRIMP TRAWLERS AT KARACHI FOR REPAIRS:

Seven 60-foot Iranian shrimp trawlers were reported hauled out at the Pakistani port of Karachi for repairs the latter part of May this year. These are shrimp trawlers that were purchased in 1959 and transported from the United States aboard freighters to the Persian Gulf to fish for shrimp for a firm controlled by a New York City importing and distributing firm. A freezership also makes up part of the fishing and freezing operation under the control of the United States firm.

The shrimp fishing and freezing fleet operates out of the Persian Gulf port of

Bandar Abbas, Iran. The shrimp fishing vessels, each with a three-man crew, reportedly landed 1,500 metric tons of shrimp in 1959. (United States Embassy in Karachi, May 26, 1960.)



## Japan

# EXPORTS OF MARINE PRODUCTS TO THE UNITED STATES, 1958 AND 1959:

During 1959, Japanese exports to the United States of all marine products (frozen and canned fish, marine oils, and miscellaneous items) of 127,289 metric tons were valued at US\$75.3 million, a decrease of 2.4 percent in quantity but an increase of 11.5 percent in value as compared with 1958. Frozen tuna exports (65,482 tons) to the United States in 1959 were valued at about US\$19.5 million, an increase of 5.3 percent in quantity and 2.7 percent in value over 1958. Exports of all marine products were higher in 1959 as compared with 1958, except for canned tuna and marine oils.

Japan's Exports of Marine Products to the United States, 1958 and 1959				
Item	Quantity		Value	
	1959	1958	1959	1958
	.. (Metric Tons) ..		.. (US\$1,000) ..	
Tuna, frozen . . .	65,482	62,190	19,479	18,973
Tuna, canned . .	9,905	13,727	10,493	11,754
Crab meat, canned	3,114	2,547	7,542	5,816
Other canned . . .	29,549	19,590	23,839	15,644
Other fish and shellfish . . . .	17,578	16,465	12,053	9,391
Fish and marine animal oils . . .	1,661	15,893	1,911	5,962
Total all marine products	127,289	130,412	75,317	67,540
Pearls, natural and cultured . .	-	-	11,759	9,047

In addition to the marine products mentioned, a substantial amount of natural and cultured pearls was shipped to the United States. (U. S. Embassy in Tokyo, May 13, 1960.)

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# CANNED TUNA EXPORT PRICE NEGOTIATIONS STILL STALEMATED:

The directors of the Export Tuna Canners' Association in June 1960 were given full authority to negotiate with the trading companies on prices and sales methods. They met with trading company representatives on June 23 and at the meeting a spokesman for the pro-



## Japan (Contd.):

ducers said that they would lower the price of white meat by 50 cents a case, but wanted to increase the price of light meat by 20 cents. The trading companies' representatives met to discuss this proposal on June 24, and the overwhelming consensus was that the packers' proposal is completely unreasonable under present circumstances.

They decided to continue to press for a \$1 cut in the white meat price and to maintain the light meat price at the present level. (The Suisan Tsushin, June 25, 1960.)

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## EXPORT PRICE FOR YELLOWFIN TUNA UNCHANGED:

The Japan Frozen Foods Export Association and the Export Tuna Freezers' Association held a joint yellowfin tuna conference on June 20, 1960, to discuss the agreed price for July. They agreed to keep it at the same level as for the April-June period, with a base of US\$260 per short ton for 20- to 80-pound gilled and gutted clipper-frozen fish f.o.b. Japan, and so informed the joint sales company.

It was also decided that when a producer consigns fish to the joint sales company, designating the trading firm that is to handle it, and the designated trader does not make an export contract within 10 days, the joint sales company will be free to sell the fish to another trading company. (The Suisan Tsushin, June 21, 1960.)

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## PRICE FOR FROZEN TUNA EXPORTS TO ITALY DROPS:

According to recent reports, the price in Japan for frozen tuna for export to Italy has been reduced to US\$270 a metric ton c. & f. for June to August only, but most of the Japanese trading companies claim that the new agreed price is still considerably above the actual market price, which is said to be about \$245-\$260 a ton. For this reason, all sales negotiations with the Italians were difficult. Informed sources point out that

sales conditions, which had continued good for two years, have completely changed this year. (The Suisan Tsushin, June 18, 1960.)

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## FROZEN TUNA TO BE TRANSSHIPPED TO THE UNITED STATES FROM THE PACIFIC:

A large Japanese fishing company is to export about 800 tons of frozen tuna to the United States by transshipping it from the Fijian port of Suva. This is the first case of transshipment export from the Pacific.

The company's plan is to load about 600 tons of frozen albacore and yellowfin from the current Tenyo Maru mothership fleet operations, and about 200 tons of frozen skipjack from the land-based operations that began in May 1960 at Shamil Island in North Borneo, aboard the No. 28 Banshu Maru and send it directly to San Francisco and Astoria. The Japanese Fishery Agency's formal permission has already been secured, and the Banshu Maru was expected to arrive at Suva as early as the end of June.

The company hopes to make two or three similar transshipments in the future. If the practice becomes generalized, it is certain that other operators will make plans to transship to the United States the products of tuna motherships and tuna clippers through South Pacific islands or ports around the Indian Ocean (for example, Singapore).

The first transshipment through Suva will all come out of the Japanese operator's quotas for yellowfin and albacore exports from Japanese ports. (The Suisan Tsushin, June 27, 1960.)

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## MORE FUNDS PROPOSED FOR U. S. TUNA MARKET SURVEY:

The Japan Export Trade Promotion Organization (JETPO) has at present a representative in Long Beach, Calif., to investigate and report on tuna fishing conditions, auction prices, etc. There are, however, many points that are not clear about trends in the United States, and there are a number of adverse con-

## Japan (Contd.):

ditions in the frozen tuna export trade, so next year two more staff members will be stationed in the United States to study conditions in the fishery, auction prices, and the activities of canners.

Recently negotiations have been started with the Ministry of Agriculture and Forestry and other government agencies concerned for budget support for this increase, and the organization is seeking a doubling of government aid from the 37.7 million yen (US\$104,700) of the 1960 budget to 77.6 million yen (US\$215,000) next year.

Exports of frozen tuna to the United States in 1959 were about 72,754 short tons, an increase of about 48 percent from 1956. In particular, transshipment exports from the Atlantic Ocean have increased, but there have been many problems of claims in connection with these exports. (The Suisan Keizai, June 24, 1960.)

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#### SUMMER ALBACORE TUNA CATCHES DROP SHARPLY AFTER TYPHOONS:

The summer albacore fishery, which was having good fishing, has been almost brought to a halt by the effects of typhoons nos. 3 and 4, and the industry fears that the end of the season may come without any recovery. Great hopes had been held for this summer's fishery, because of the poor catches of the past two years. In mid-May the catches picked up, and through the first 10 days of June there were fairly substantial landings. The low water temperature zone on the south side of the Kuroshio was wider than in the average year, and the dense schools were extensively distributed around its outer boundary. However, after the passage of the typhoons the low temperature zone became even more greatly extended and the schools scattered, with the result that all of the good fishing areas disappeared.

According to reports from vessels at sea, there are few boats that are catching as much as 5 tons a set, and on the average they are getting only

about 1 ton from a school. Consequently the landings at Yaizu dropped off until they were only 91 metric tons on June 20, 79 tons on the 22nd, and 63 tons on the 23rd.

Summer albacore landings for the season through June 23 are estimated at around 13,000 or 14,000 tons, little more than 20 percent of the 60,000 tons required by canners and freezers. If the season ends as predicted, some sources feel that prices as high as those of last year will prevail. The ex-vessel price on June 20 was US\$353 a short ton, putting the price back up to about the same level as in May. (Suisan Keizai, June 24, 1960.)

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#### CARIBBEAN INVESTIGATION FINDS GREEN TUNA UNPREDICTABLE:

The findings of the Caribbean cruise of the Japanese Fishery Agency's research vessel Shoyo Maru have recently been compiled. The Agency reports, with regard to ways of dealing with the green meat problem in tuna, that in yellowfin the only correlation found was with the size of the fish. Above the weight of 88 pounds, there was found to be a danger of green meat occurrence. It was further reported that almost all big-eyed tuna had green meat.

The main points of the Shoyo Maru's report of research were as follows:

In processing of yellowfin ashore it is held that occurrence of green meat can be deduced from the color of the raw fish, but in processing experiments aboard the Shoyo Maru this was found to be impossible. Hitherto it has been said that green meat is likely to occur in fish in which the meat pigment has oxidized, but green meat appeared unpredictably in cases where the oxidation was not distinguishable by the naked eye. Fish weighing up to about 88 pounds were found to be all right, regardless of the area of capture, but off-colored fish turned up in those of 110 pounds or larger. This was true only for the Caribbean, and not one case of green meat was seen in large fish from the North Atlantic. The condition was unrelated to whether the fish was fresh or frozen,

## Japan (Contd.):

but the texture of the meat was somewhat poorer in frozen fish.

Albacore from the Caribbean were of good quality, somewhat between Japanese summer and winter albacore in size.

It was concluded that there is a need for biological study of yellowfin over 88 pounds in order to discover the cause of the formation of green meat. These large fish, even though the meat is not green, yield a poor color after processing.

There was no problem with albacore from near the Equator; however, if processing was not done well, the color was dark. There is a special need for detailed study of albacore from the vicinity of 30 degrees north and south latitude. (The Suisan Keizai, June 25, 1960.)

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#### FISHERY AGENCY SETS POLICY ON TUNA IMPORTS FROM RYUKYU ISLANDS:

In recent months the Japanese Fishery Agency has been studying the probable effects on the Japanese fishing industry caused by the future liberalization of Japan's imports of fishery products. As regards tuna, the Agency and the Japanese industry have been most worried by the prospect of fish from the Ryukyus entering Japan in considerable quantities. These fears have been reinforced by the Okinawans' desire to build up their tuna fishery, as evidenced by their efforts to buy second-hand tuna boats in Japan.

The Japanese fishery trade press reports that an understanding on this matter has now been reached between the Fishery Agency and the Ryukyu Government. According to these reports, the Ryukyuans will not take any actions that would impair the effectiveness of Japanese administrative controls over tuna fishing and the trade in tuna products. For its part, the Japanese Fishery Agency will approve the importation of up to 500 metric tons yearly of tuna and spearfishes from the Ryukyus and the exportation

tion of 2,000 tons of tuna boats over a five-year period.

Press comment on this development emphasizes Japan's residual sovereignty over the Ryukyus, stressing the opinion that since the Ryukyus are not really a foreign country it is appropriate for Japan to assist the development of the fishing industry there. At the same time, the Fishery Agency has made it clear that it cannot allow direct landings in Japanese ports by Ryukyuan tuna boats, and the import of tuna from the Ryukyus will be formally handled by designating tuna as a permissible import item under the category "Materials from Southern Countries." (United States Embassy report from Tokyo, June 3, 1960.)

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#### SALMON CATCH LIMITS FOR LAND-BASED GILL NETTERS SET:

On June 20, 1960, the Japanese Fishery Agency informed the Hokkaido Government and other local jurisdictions of its policies for allocating the salmon catch quota for land-based vessels operating within, the Japan-Soviet treaty area south of 48° N. latitude. The Agency's announcement relates to the 264 boats of over 30 tons gross which have licenses from the Minister of Agriculture.

The catch quotas are to be 33.8 metric tons for each vessel of 30 to 39.99 tons gross, and 39.8 tons for each vessel over 40 tons gross. Operating licenses for the treaty area were to be issued at the boat owner's application after June 25.

The changes in operating area limits which had been strongly demanded by the All-Japan Salmon Fishermen's Federation were refused by the authorities, and a final decision was made to add to the operating area for these vessels only the rectangle bounded by 46°-48° N. lat. to 165°-168°35' E. long., which will be open to land-based fishing after the first of July. The Fishery Agency expressed the view that no other adjustment of the fishing area was possible because of the closing of two new areas this year and the closing of the large triangular area east of the Kuriles last year.

The decision as to how to allocate the catch quota of 13,500 metric tons for

## Japan (Contd.):

land-based vessels in the treaty area among various vessel tonnage classes was left entirely up to the Salmon Fishermen's Federation. In addition to the 264 vessels which have ministerial licenses, there are 151 vessels licensed by the Governors of the Prefectures. For the latter, the catch limits will be 9.8 metric tons for 5- to 10-ton vessels, 11.8 tons for 10- to 15-ton vessels, 19.8 tons for 15- to 20-ton vessels, and 33.8 tons for 20- to 30-ton vessels. (The Suisan Tsushin, June 21, 1960.)

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#### NORTH PACIFIC SALMON FACTORYSHIP OPERATIONS OFF TO GOOD START:

The Japanese North Pacific salmon factoryship fleets all reached their fishing grounds on May 25, 1960, and began to take on fish from nets that had been set by the catcher boats which preceded them. On the average, each mothership received about 40 tons of salmon on the 25th. Of this amount as much as 80 percent was red salmon, marking a good start for the season. It was expected that full-scale landings, with all catchers hauling nets, would begin around May 27. The fleet escaped the usual May storms. (The Suisan Tsushin, May 28, 1960.)

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#### NORTH PACIFIC SALMON FISHERY TRENDS, JUNE 1960:

On June 21, 1960, the Japanese Ministry of Agriculture reported as follows on the progress of this year's North Pacific salmon fisheries:

The mothership fishery, as of June 15, had taken slightly under 15,000 metric tons. This was about 27 percent of the mothership's 54,000-ton catch quota. Last year at the same time about 20,000 tons had been taken, but the lower catch this year is the effect of delay in the fleets' sailing. The over-all success of the season would be decided by the catch in the period beginning in late June, when pink salmon appear.

There are no accurate reports as yet of the operations of the land-based gill-

net fishery, but the operators say that the catch is about 20 percent below last year's. However, the price is up, so the profit situation is not too bad.

So far Japanese patrol boats have caught four salmon boats violating regulations, and the Government is going to deal with them sternly, so as to prevent violations in the future. The Soviets have not yet cited any Japanese boats for violations.

The Hokkaido Fisheries Experiment Station in mid-June released the following on ocean conditions and fishing conditions in the first 10 days of June:

Ocean conditions: Because salmon fishing was concentrated west of 155° E., sea conditions east of that longitude and off northeastern Honshu were unknown. East of 150° E. water temperatures were 1 to 2 degrees higher than in the preceding 10-day period, but there were no major general changes.

Fishing conditions: Small salmon boats under 7 tons gross were concentrated in the three ports of Kushiro, Akkeshi, and Hanasaki on the east coast of Hokkaido, and pink salmon availability was not as good as in the preceding period. Offshore there were still no boats operating east of 155° E. Fishing was concentrated in a zone of 42.8°-46.4° F. water temperatures extending from 149° E. northwestward to 155° E. In the area centered around 42° N., 149°-150° E., small vessels in large numbers were fishing for pinks and having extremely poor luck. Most of the larger boats were concentrated in the area centered around 43° N., 151°-152° E. The area centered around 44° N., 154° E., continued to be occupied largely by long-line boats. Pink salmon catch rates were fair until June 14 or 15, when they became poor. (Suisan Keizai Shimbun, June 21 and 22, 1960.)

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#### NORTH PACIFIC SALMON PRICE NEGOTIATIONS ABOUT CONCLUDED:

Negotiations over the ex-vessel price of North Pacific salmon have been under way since early in May between the North Pacific Mothership Council (formed of 8 salmon mothership operating companies)

## Japan (Contd.):

and the Japanese Federation of Salmon Fishery Cooperative Associations (the catcher boat owners' association). On June 22, 1960, negotiations were to enter the final stage at Tokyo. Both sides wanted to settle salmon prices quickly, and an agreement was expected by the end of June.

The outstanding feature of this year's negotiations is that both mothership operators and fishing boat owners have revealed their operating expenses in an attempt to work out a reasonable fish price. At a meeting on June 20 it turned out that the figures offered by the two sides were based on different estimates. Therefore, a meeting was held on June 22 for a final reconciliation of views.

In 1959, salmon prices were raised about 11 percent above those of the previous year, and averaged for all species about 97,000 yen (US\$270) a metric ton. This year the fishing boat operators are again asking for an increase, because the Japan-Soviet fishery negotiations resulted in a cut in the total salmon catch quota, and it looks as if a raise of the average price for all species to over 100,000 yen (US\$278) a metric ton will be unavoidable. (Nippon Keizai Shimbun, June 22, 1960.)

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#### EARLY SALES CONTRACTS TO UNITED STATES FOR CANNED PINK SALMON DELAYED:

Generally in mid-June contracts are made for early shipments of pink salmon (No. 4 cans<sup>1/</sup>) to the United States, but this year production in Hokkaido has been light, and there are indications of an overall drop in pink salmon production. As a result, there does not seem to be any particular necessity for promoting sales to the United States. Buyers in the United States also are showing no haste to buy because of prospects for increased production in Alaska. For these reasons the Japanese joint sales company and the trading firms have not actively opened sales talks. There was a strong possibility that signing of sales contracts would be delayed until July. Furthermore, there were good prospects that

<sup>1/</sup>Equal to U. S. 1-lb. can.

the quantity available for early shipment would be only about half of last year's approximately 70,000 cases.

The beginning of packing in Hokkaido was delayed by about one week this year and because of high ex-vessel prices packing was held down. There is also a tendency to wait until late in the season to pack No. 4 cans, due to a low profit margin, and it is estimated that the pack would not be on hand until the latter part of July. It is probable that the pack of No. 4's, including factoryship pack, will be at most only about 150,000 cases, so that there is little need for rushing ahead with contracts for early shipment. It is estimated that the US\$17 price per case of the last half of the 1959 season will be maintained (last year's price for early shipment was \$16.75). (The Suisan Tsushin, June 18, 1960.)

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#### KING CRAB QUOTA INCREASED FOR BRISTOL BAY FACTORYSHIP:

On June 21, 1960, the Japanese Fishery Agency granted a 10,000-case increase in the production quota of the Bristol Bay king crab factoryship Tokei Maru, formally raising the quota to 80,000 cases. The increase had been requested some time ago by the three joint operating companies.

In connection with this quota increase the operators of the other Bristol Bay crab mothership, the Shinyo Maru, had also requested a larger production quota, but the authorities withheld action on that request. The Tokei Maru was expected to fill her original 70,000-case quota by the end of June, and it was considered possible that she would complete production of the 80,000 cases by the middle of July. (The Suisan Tsushin, June 22, 1960.)

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#### BERING SEA FISHERY FOR BOTTOM FISH TO BE RE-EXAMINED:

The Japanese Fishery Agency is to re-examine its licensing policy for the Bering Sea freezership-mothership flatfish fishery fleet and similar trawling operations due to begin in September 1960. This re-examination will involve the condition of the resources, the problem of



## Japan (Contd.):

competition with the fish-meal factory-ship-mothership fleets, and the number of licenses to be issued this year.

This year there are already four trawling fleets in the Bering Sea with the fish-meal factoryships Renshin Maru, Shinyo Maru, Gyokuei Maru, and Soyo Maru. They have been operating for four months and have already passed last year's catch of 140,000 metric tons of fish, and operations are continuing.

Beginning in September, the same grounds will be fished by fleets producing frozen flatfish. This year three large fishing companies are planning to send out a total of four such freezer-ships--the Chiyo Maru, Miyajima Maru, Kashima Maru, and Kyokuzan Maru.

The Fishery Agency foresees that with the 8 fleets, plus a 9th fleet out for arrow-toothed halibut, competition on the fishing grounds will become sharper. Furthermore, changes in the resources are appearing as a result of the fish-meal operations, and there will have to be discussion of such questions as: Whether or not it is all right for the industry to go ahead with its planned fish-meal and fish-freezing operations? What problems will come up from the standpoint of economical operation of the fleets? How are the fishing grounds to be assigned? (The Suisan Keizai, June 22, 1960.)

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#### CATCHES OF FISH-MEAL FLEETS DROP SHARPLY:

Of the five Japanese fish-meal factoryship fleets operating this year, the Soyo Maru and Tenyo Maru fleets are operating northwest of St. Paul Island, while the other three--Kinyo Maru, Renshin Maru, and Gyokuei Maru--are fishing in Bristol Bay. During April and May this year each fleet was making catches of around the planned 600 metric tons a day, but in June a downward trend in the catches appeared, and they were able to take only about 300 tons a day, some days even less.

Japanese Fishery Agency authorities are watching the trend of the fish-meal

fleet catches closely, in connection with the licensing of the frozen flatfish fleets, which are scheduled to begin operating in mid-August. They have begun an investigation of the causes of the sudden drop in catches in June, and the prevailing view is that there is a limit to the resource, because the fishery works on bottom fish and because the fishing grounds are limited in extent.

Taking the experience of one of the fish-meal fleets as an example, catches for the first 5 days of June ranged from 378 to 483 metric tons. From the 6th to the 9th they improved to between 580 and 720 tons, but from the 10th on they declined again. On the 22nd the catch was 220 tons, the lowest since fishing began at the end of April and a catch level that was completely unanticipated. The Fishery Agency will make a report and try to devise some countermeasures, as soon as some conclusions have been reached, but it does not appear that the Japanese authorities are considering cutting down on the frozen flatfish fleets because of the poor catches of the fish-meal fleets.

Present plans are for 6 flatfish freezing fleets to operate this year, after the salmon mothership fishing season. One large fishing company will send out two flatfish freezer-ships, and three other companies will send out one each. In addition the mothership Otsu Maru will operate in cooperation with the Hokkaido Trawlers' Federation. (The Suisan Tsushin, June 25, 1960.)

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#### IMPORT RESTRICTIONS ON SOME FISHERY PRODUCTS LIBERALIZED:

The Japanese newspaper Suisan Keizai of June 23, 1960, reported the following schedule planned by the Japanese Government for the liberalization of imports of fishery products: Items to be liberalized immediately: edible frogs, frozen rainbow trout, fish eggs, shark fins, fish livers; canned oysters; scallops; red, silver, and pink salmon; tuna, mackerel, saury, sardines, king crab, shrimp, squid, abalone, topshells, clams, fish eggs, crustaceans; and whale oil, harpoons, artificial gut line, and fish nets.

Items to be liberalized within three years: frozen tunas, broadbill sword-

## Japan (Contd.):

fish, marlins; salted and frozen salmon and sea cucumbers; shrimp; and agar-agar.

Items not to be liberalized: whale meat; fresh marlins, snappers, yellow-tail, mackerel, herring, sardines; frozen cod; eggs of herring, cod, and salmon; dried scallops, squid, and seaweed; and fish meal.

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# SEAWEED INDUSTRY TRENDS, JUNE 1960:

Bidding for this year's gelidium or agar-agar seaweed began in June 1960 at various Japanese producing areas. In some places the price was very high. The raw seaweed for agar-agar is commanding higher prices because of the decline in production and the increase in demand in 1959.

Last year the gelidium crop was poor, with production on the Muroto coast of Kochi Prefecture down by 50 percent, and for the country as a whole down about 20 percent. Gracilaria production was only about one-sixth of normal in the main producing area of Akkeshi Bay, and for the country as a whole it was down about 35 percent. For several years the average annual production has been about 11,578,000 pounds of gelidium and about 8,270,000 pounds of other agar-producing seaweeds. On the other hand, the demand is considered to be about 16,540,000 pounds of gelidium and about 9,097,000 pounds of other kinds of seaweed.

The difference is made up by imports from other countries. Until 1958 imports were about 2.5 to 3.3 million pounds, but last year imports jumped to 6.6 million pounds. Prior to 1958, imports were all from Korea, but last year seaweed was bought from countries all over the world, and it is thought that the problem will become quite complicated in the future.

In 1959, a phenomenon appeared which merits the attention of the agar-agar industry. At the city of Hachioji, the Japan Seaweed Industry Corporation built

a large factory. The company's production plans are said to call for making 1.2 million pounds of agar-agar from gelidium and 300,000 pounds from gracilaria. Calculated in terms of raw weed, this is nearly 5 million pounds of gelidium and 840,500 pounds of gracilaria. This new fact poses a big problem for the producers, as to how to devise a rational and profitable system for supplying raw material.

It is expected from present indications that the national production of seaweeds this year will be 10 to 20 percent above 1959. However, demand has grown more than this, and competition for raw material is growing more vigorous, raising prices with it. This raises the danger of the processors' turning to imported material. (The Suisan Keizai, June 17, 1960.)

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# KOREAN AGAR-AGAR SOON TO REACH JAPAN:

The agar-agar from South Korea, which a Japanese trading firm is importing for the Japan Sea and Land Products Export Association, was expected to reach the port of Kobe, Japan, the latter part of June. The quantity is 150,000 pounds. The shipment was delayed because the Korean exporters asked for a price increase, but the Japanese purchasers gave ground to the extent of US\$1.25 a pound, and the deal went through.

The Japan Sea and Land Products Export Association, in order to maintain overseas markets for Japanese agar-agar and expand exports, made its first importation of 300,000 pounds of Korean agar in 1959 and re-exported the material. The present shipment is the second importation by the Association. The agar-agar will be sorted in bonded customs warehouses and then exported.

Exports from January to December of 1959 were 1,597,176 pounds, valued at 694,864,000 yen (US\$1,931,722). Since December 1959, when controls on quantity and price were imposed, exports have been as follows: December 1959, 56,159 pounds (US\$79,249); January-March 1960, 612,931 pounds (US\$957,557). (Nippon Suisan Shimbun, June 24, 1960.)

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Japan (Contd.):

**PEARL EXPORTS IN 1959  
SET NEW RECORD:**

The All Japan Pearl Culture Cooperative (AJPCC) in Ise City, Mie, exported 39,983 kg. (88,147 pounds) of cultured pearls during 1959, valued at ¥8,570 million (US\$23.8 million), the highest export record in the industry's history. This exceeded the 1958 exports by 6,400 kg. (14,109 pounds) in weight and ¥2.2 billion (\$6.1 million) in value and the industry's 1959 export goal by \$3.8 million.

The United States took 55 percent of the export total as the largest customer, followed by Switzerland which bought 14 percent, West Germany with 7.5 percent, and India with 4 percent. The average ex-factory price for export pearls showed a fairly sound market price of ¥802 (\$2.23) per momme (3.75 gr., about 0.132 ozs.) despite some overproduction. Due to a typhoon--which killed a great number of mother-oysters due for harvesting in 1960--the cooperative anticipated a strong market through the first half of 1960. (United States Embassy, Nagoya, December 28, 1959.)

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**PEARL-SHELL OPERATIONS IN  
ARAFURA SEA, JUNE 1960:**

The Japanese Arafura Sea (off northern Australia) pearl-shell fleet reached the fishing grounds on May 23, 1960. As of June 11, the fleet had worked one-and-a-half tidal cycles and had gathered 59 metric tons of shell. This year the shell is small, but the quality is extremely good, and those concerned consider that the limit of 415 tons will be reached. The mothership Yamato Maru and 11 luggers worked off Port Darwin from May 23 to June 11. Operations will continue to the end of October, with the latter part of the season to be spent in the vicinity of Thursday Island.

The world market for pearl shell began to fall around 1955 and hit the bottom last year. It is expected to recover somewhat this year. The Japanese pearl-shell company considers that the resource is in good condition, which is also recognized by the Australians, and

with good shell quality, they are expecting an upturn in the market. It is also expected that there will be a favorable effect on next year's negotiations with Australia over the fishery. Last year the catch limit was 375 tons, but only 346 tons were taken. This year it is considered quite possible to take 390 to 400 tons. The fleet is scheduled to return to its base at Kushimoto about November 15. (Nippon Suisan Shimbun, June 15, 1960.)

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**FISHING VESSEL CONSTRUCTION,  
JUNE 1960:**

The Shimonoseki branch of a large Japanese fishing company has begun work on its fourth large stern trawler, which will be the largest in Japan. Keel-laying ceremonies for the 1,850-gross-ton vessel, as yet unnamed, were held on June 18, 1960, at the company's shipyard. Completion is scheduled for the end of September.

A Japanese fishing company will begin construction of a 1,300-gross-ton tuna long-liner, the Eiho Maru, on July 11 at Shimizu. The vessel will be a sistership to the owner's recently-completed Eio Maru, and will be finished around November. Particulars are: gross tonnage 1,280; length 238.5 feet; beam 37.7 feet; depth 17.4 feet; refrigerated holds 52,900 cubic feet; maximum speed 14.5 knots; main engine, a 1,000-hp. Diesel.

A Nagasaki shipyard has recently begun construction on a 1,246-gross-ton tuna long-liner ordered by a large Japanese fishing company. This vessel is designed to carry 4 small fishing boats, for which it will serve as a mothership in operations off the West African coast. The vessel will be 219.8 feet long, 39.4 feet in beam, and will have a variable pitch propeller. Launching is scheduled for September 7 and completion for mid-October. Also, a 243-gross-ton tuna long-liner is being built for a private owner in Yaizu.

The above vessels are included among 49 construction permits for fishing vessels issued by the Japanese Fishery Agency on May 27, 1960. (Nippon Suisan Shim-

Japan (Contd.):

bun, June 22, and Suisan Keizai, June 24, 1960.)

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#### TRAWLER REPORTS GOOD FISHING OFF NORTHWEST AFRICA:

A large Japanese fishing company's 1,490 gross ton stern-trawler No. 62 Taiyo Maru started fishing early in June off the Canary Islands, off northwest Africa. Reports reaching the owner's Shimonoseki offices indicate that catches are better than expected, running 10 to 20 metric tons a day. The catches are more than 90 percent red snappers, with gurnards and croakers also appearing in the catch. The vessel is scheduled to return to its home port of Shimonoseki the latter part of August.

The owners say that in addition to this vessel, the northwest African grounds are also being fished by the same company's No. 6 Taiyo Maru, based at Tangier, and by the Uji Maru, operated by another large Japanese fishing company. Other Japanese trawlers headed for the area are the No. 63 Taiyo Maru, which will begin fishing June 23, the Asama Maru, Tatsuta Maru, and Seiju Maru. (Nippon Suisan Shimbun, June 22, 1960.)

JAPANESE GOVERNMENT



#### Kuwait

##### SHRIMP FISHERY IN PERSIAN GULF INITIATED:

A United States firm of New York City in partnership with a Kuwaiti firm has been engaged in shrimp fishing in the Persian Gulf since the first of 1960. Two shrimp trawlers were purchased in Florida by the Kuwaiti firm for US\$180,000 in 1959 and were brought to Kuwait (south of Iraq on northwest coast of Persian Gulf) late in the year. The captain and engineer on each boat are American and the remainder of the crew, an assortment of Persian Gulf fishermen--Persians, Arabs from the Trucial Coast, and Baluchis.

This activity has been profitable for all the participants. Although the boats did not start operations until the middle of the season (August 15-April 15 in this part of the Gulf), they caught over 240,000 pounds of shrimp which were deheaded, frozen, and packed in five-pound cartons on board the trawlers. The frozen shrimp are delivered to freighters for shipment and subsequent sale in the United States. The local firm reportedly realized about \$150,000 in the sales and after deducting production expenses of about \$50,000 realized a gross profit of \$100,000. The United States firm, which has put out no capital, acts solely as a selling agent in the United States.

The United States captains of the trawlers are paid \$1,500 per month plus a bonus of \$25 a ton of shrimp delivered. The engineers are paid \$800 per month and a bonus of \$15 a ton of shrimp. The crew members are given room and board and paid wages of about \$41--considerably above the usual rate in the Gulf.

The shrimp trawlers fish in waters of 35-45 feet, but their range is quite limited. They rarely go beyond 40 miles from Kuwait territory and, as Kuwaiti fishermen object if they come too close to shore, they usually remain about 8 miles from mainland Kuwait.

The shrimp are found in considerable quantity within the restricted area fished and, according to the United States fishermen, these waters could probably support sustained catches of over one million pounds per year. Much of the fish, which are caught incidentally during shrimp trawling, is sold on the local market. The Government will not permit its sale for export. (United States Consulate, Kuwait, May 31, 1960.)



#### Malaya

##### IMPORTS OF MARINE OILS, 1959:

Malaya imported 250 long tons of marine-animal oils in 1959 as compared with 137 tons in 1958--only one ton was exported each year. Singapore and Pe-

## Malaya (Contd.):

nang are free ports and have no import duties on marine-animal oils. But the Federation of Malaya full and preferential import duty on marine-animal oils is 25 percent. (U. S. Foreign Agricultural Service Report, Kuala Lumpur, April 12, 1960.)



## Mexico

## MARINE-OIL IMPORTS AND EXPORTS, 1958 AND 1959:

Imports of marine-animal oils by Mexico increased to 859 metric tons in 1959 as compared with about 680 tons in 1958. Oils imported from the United States rose sharply—from 87 tons in 1958 to 355 tons in 1959. In 1959 the United States was Mexico's main source of sperm-whale oil and fish-liver oil, and a leading source of whale oil. Practically all the sperm, cod, and fish-liver oils shipped by the United States to Mexico are re-exports.

Mexico's Imports of Marine Oils, 1958 and 1959		
Product and Origin	1959	1958
	(Metric Tons)	
<b>Whale Oils</b>		
United States . . . . .	24.6	14.2
Great Britain . . . . .	29.9	34.4
Germany . . . . .	8.9	15.8
Norway . . . . .	17.4	1.3
Italy . . . . .	3.4	-
Total whale oil . . . . .	84.2	65.7
<b>Sperm Oils</b>		
United States . . . . .	31.8	1.5
Great Britain . . . . .	8.8	10.3
Norway . . . . .	5.6	-
Germany . . . . .	0.3	-
Total sperm oil . . . . .	46.5	11.8
<b>Cod Oils</b>		
United States . . . . .	75.7	57.5
Norway . . . . .	365.9	364.8
Great Britain . . . . .	11.2	11.2
Germany . . . . .	3.4	5.7
Argentina . . . . .	-	1.1
Total cod oil . . . . .	456.2	440.3
<b>Fish-Liver Oils</b>		
United States . . . . .	222.9	13.5
Norway . . . . .	38.2	130.8
Great Britain . . . . .	11.2	17.1
China . . . . .	-	0.4
Total fish-liver oil . . . . .	272.3	161.8
Total all marine oils . . . . .	859.2	679.6
Total imports from U. S. . . . .	355.0	86.7

The 365 tons of cod oil imported from Norway in 1959 and the 364 tons in 1958 were responsible for Norway's position as Mexico's main supplier of marine-oil products.

Exports of marine oils by Mexico in 1959 consisted of 100 tons of whale and shark oil to the United States as compared with 66 tons in 1958. El Salvador, Mexico's only other buyer of marine oils, received less than 1 ton in 1959 and none in 1958. (U. S. Foreign Agricultural Service Report, Mexico, April 19, 1960.)

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## PRESIDENT STATES POLICY ON TERRITORIAL WATERS AND CONTINENTAL SHELF:

The President of Mexico in his Navy Day address on June 1, 1960, referred to his policy concerning the natural resources of the territorial waters and the continental shelf. According to the June 2, 1960, issue of the Mexico City newspaper *Novedades*, the President said:

"The resources of our territorial waters as well as those of the continental shelf form part of our patrimony. Their exploitation, performed by Mexicans, in benefit of the people is a legitimate national aspiration. Consequently we shall oppose with all energy the utilization of such resources on the part of those who, having the material means for realizing it, nevertheless lack all right."

The above statement is a reiteration of the sentiment expressed in the 1959 constitutional amendments, according to a June 3, 1960, dispatch from the United States Embassy in Mexico City.

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## SHRIMP FISHERY TRENDS, MAY 1960:

Price negotiations between the Mexican fishermen's cooperatives and vessel owners for the 1960-61 shrimp catch were postponed in mid-May. Current contracts were extended for a period of 90 days which were to expire August 13. Unless agreement was reached by mid-August, it was probable the fishermen would tie-up the vessels.

The Carmen-Campeche price war between independent vessels continued throughout May. The latest price increase was reported on May 19 when prices on most sizes were increased 1-3 U. S. cents a pound. Salina Cruz prices have been unchanged for two months.



## Mexico (Contd.):

Mid-May ex-vessel prices in U. S. cents a pound at Carmen and Campeche for white, pink, and brown headless shrimp were the same for all sizes and were: under 15 count, 80; 15-20 count, 75; 21-25 count, 70; 26-30 count, 65; 31-35 count, 58; 36-40 count, 48; 41-50 count, 43; and 51-65 count, 36; over 65 count, 26.

Salina Cruz landings, after a drop in April and early May, picked up towards the end of May with boats landing between 2 and 3 tons of heads-off shrimp for a 13-day trip.

In both Carmen and Campeche average landings were up over April. In Carmen fishermen reported shrimp scattered, but landings averaged around 950 pounds of heads-off shrimp for 6-8 day trips. At Campeche landings averaged over 1,000 pounds per trip.

Sizes at Carmen tended to vary during May; about 40 percent of the landings were 30 and under count. As usual Campeche sizes ran larger, about two-thirds of the landings were 30 count and under.

Species composition of the landings both at Carmen and Campeche fluctuated during the month. However, at Carmen the distribution was about 40 percent white, 35 percent pink, and 25 percent brown. At Campeche the landings were about 70 percent pink with the remainder about evenly distributed between white and brown. (June 6, 1960, report from United States Embassy, Mexico.)



## Netherlands

## MARINE-OIL PRODUCTION, FOREIGN TRADE, AND CONSUMPTION:

**Production:** The Netherlands' production of marine-animal oils decreased from 30,277 metric tons in 1958 to 24,110 tons in 1959 due to the drop in whale oil production in 1959.

The production of refined and refined hardened oils from fish and marine-animal

oils increased from 54,426 metric tons in 1958 to 60,745 tons in 1959.

Table 1 - Netherlands Production of Marine-Animal and Fish Oils, 1958-59

	1959				Total	1958
	Quarter					
	First	Second	Third	Fourth		
	(Metric Tons)					
Fish oils	526	999	2,502	1,189	5,216	4,425
Whale oil	116	18,778	-	-	18,894	25,852
Sperm oil	-	1	-	-	1	-
Total	642	19,778	2,502	1,189	24,111	30,277

**Exports:** In 1959 the Netherlands exported 8,537 metric tons of processed fish and marine-animal oils as compared with 7,368 tons of crude.

Table 2 - Netherlands Exports of Fish Oils by Type and Area of Destination, 1959

Destination	Fish and Marine Oils		Total
	Crude	Processed	
	(Metric Tons)		
Common market and associated countries . . .	7,167	417	7,584
Other O.E.E.C. countries and associated areas . . .	192	7,883	8,075
Other countries . . . . .	9	237	246
Total . . . . .	7,368	8,537	15,905

**Imports:** Whale oil comprised 63 percent of the Netherlands marine-animal oil imports in 1959; other fish oils 33 percent and sperm oil only 4 percent. The import pattern for all fats and oils is expected to remain unchanged.

Table 3 - Netherlands Imports of Marine-Animal and Fish Oils by Type and Area of Origin, 1959

Origin	Whale Oil	Fish Oil	Sperm Oil	Total
	(Metric Tons)			
Common market and associated countries . . .	20,228	1,640	76	21,944
Other O.E.E.C. countries and associated areas . . .	13,281	6,459	741	20,481
British Dominions . . . . .	2,461	120	891	3,472
Other countries . . . . .	12,040	12,976	640	25,656
Total . . . . .	48,000	21,195	2,348	71,553

**Consumption:** The use of sperm oil for technical purposes decreased slightly from 2,378 metric tons in 1958 to 2,285 tons in 1959; the quantity of marine-animal and fish oils used for technical purposes remained relatively stable--837 tons were used in 1958 and 830 tons in 1959. (U. S. Embassy at The Hague, May 16, 1960.)



## Nicaragua

### SHRIMP FISHERY TRENDS, MARCH 1960:

Exports of shrimp from Nicaragua during the first quarter of 1960 amounted to about 110,000 pounds. Practically all the shrimp exports during the first quarter of 1960 were made from the port of El Bluff on Bluefields Island by the French shrimp fishing, freezing, and processing company which was established in 1959.

During 1959 shrimp exports (about 96 percent to the United States) totaled 445,854 pounds. This total compares with 610,086 pounds, valued at US\$319,321, exported in 1958; and only 2,784 pounds, valued at \$1,325, in 1957.

The French-owned shrimp fishing and processing company in Bluefields is expected to have a permanent freezing and processing plant completed in July this year. The new plant will have a processing capacity of about 30 tons of shrimp per day and a storage capacity of 200 tons. Future plans call for a work force of 150 and a fleet of 60 fishing and auxiliary vessels. (United States Embassy, Managua, May 3, 1960.)



## Norway

### HERRING AND LOFOTEN COD FISHING POOR IN 1960:

The Lofoten cod fisheries season which ended in May yielded the second poorest catch since the war. According to preliminary figures, it totaled about 37,000 tons, with an ex-vessel or first-hand value of Kr. 37 million (US\$5.2 million), compared with the lowest post-war catch of 33,841 tons in 1958. Unfavorable weather and the prohibition of seine fishing in the Lofoten fisheries during the last two years were mainly responsible.

The winter herring fisheries also had exceptionally poor results this year, with a total catch of 2 million hectolitres (186,000 metric tons), just over 50 percent of last year's catch and the smallest since the war. This is the third con-

secutive year that the winter herring fisheries have been considered a failure. (Canadian Foreign Trade, June 18, 1960.)

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### TASTELESS AND ODORLESS HERRING FLOUR DEVELOPED:

A method for producing herring flour with no taste or odor whatsoever, intended to be mixed 1-10 with grain flour for baking bread and rolls, has been perfected by the Norwegian Fishery Directorate's Ocean Research Institute in Bergen. (News of Norway, May 26, 1960.)

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### TO EXTEND FISHING LIMIT TO 12 MILES:

In a statement to the Norwegian Parliament on May 13, the Foreign Minister deplored the failure of the recent 88-nation conference on the Law of the Sea, at Geneva, to reach agreement on new universal limits for territorial and fishery zones. Under the circumstances, he said, the Government sees no alternative but to make the necessary preparations for extending Norway's fishing zone from 4 to 12 miles. This move is designed to provide better protection for coastal fishermen against the damage to fixed gear wrought by foreign trawlers year after year, and thus assure the livelihood of Norwegian fishermen in the future.

Foreign fishing vessels are now barred from a zone delimited by a series of straight lines drawn 4 miles from, and parallel to, so-called base lines between extreme points of North Norway.

The Foreign Minister said the Government was aware that extension of the fishing limit might cause serious difficulties for foreign fishing vessels now operating in Norwegian waters between 4 and 12 miles. To make it easier for these fishermen to adjust to the new situation, the Government is willing to begin negotiations with other countries on reasonable transition arrangements. Whether such negotiations should be conducted on a bilateral basis with individual foreign countries, or multilaterally with a group of countries, is a question that has not been decided as yet.

The Foreign Minister stressed that the Norwegian Government has always advocated that solution of the territorial and fishery zone questions should be sought through international agreement, with the greatest possible participation. Fishermen's organizations have repeatedly demanded that the fishing limit be extended to 12 miles, and each time the Government has urged patience while the United Nations was seeking a global solution. Now, however, the Government feels that it would no longer be justified in postponing the extension.

The Norwegian delegation to the 1960 conference in Geneva was instructed to support the Canadian proposal calling for a territorial sea limit of 6 nautical miles and an adjacent 6-mile fishing zone. Norway's shipping and aviation interests, the Foreign Minister declared, make it desirable that territorial waters in all parts of the world be limited as much as possible, and not exceed 6 miles, at any rate. The interests of Norwegian fishermen, on the other hand, require the opportunity to establish a 12-mile wide fishing zone, with exclusive rights for fishermen of the coastal state. To be sure, the interests of Norwegian whalers, sealers, and deep-sea fishermen operating off the coasts of other nations pull in the opposite direction. But, on the basis of an over-all appraisal, one must say that Norwegian economic interests are best served by a fishing zone of 12 miles.

At a later stage of the conference, Norway decided to back the compromise worked out between the Canadian and the United States proposals. This called for a territorial sea of 6 miles, plus an adjacent 6-mile fishing zone, with a 10-year

## Norway (Contd.)

period for liquidation of so-called traditional fisheries conducted by foreign fishermen in waters between the 6 and 12 mile limits. Norway was one of the 54 nations which voted in favor of the compromise proposal. Unfortunately, this failed by one vote to receive the necessary two-thirds majority.

"The negative outcome in Geneva," the Foreign Minister told Parliament, "is a regrettable defeat for efforts to clarify, codify, and develop international law. As a result, there will continue to be doubt and uncertainty regarding the width of the offshore waters that a state, according to international law, can subject to its own sovereignty, wholly or partly. This uncertainty will give rise to disputes, which in some instances may lead to serious conflicts. The continued doubt about international rules in this important area is especially unsatisfactory for such a small country as Norway. Because of our weak position in world politics, we are obliged to seek protection for our economic interests on the sea in rules established by international law," he declared. (*News of Norway*, May 19, 1960.)

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VESSEL OWNERS' ASSOCIATION  
PROTESTS 12-MILE FISHING LIMIT:

The chairman of the Norwegian Association of Fishing Boat Owners (representing fishing boat owners in south and west Norway that carry on ocean fishing off the coasts of Greenland, Newfoundland, the Faeroes, etc.) has stated to the press that his Association will protest against the Norwegian Government's announced intention to extend the national fishing boundary to 12 miles. He is reported to have stated that similar action can be expected by other nations in the North Atlantic area, which will mean the exclusion of the Norwegian high-seas fishing vessels from their traditional areas of operation and that the 12-mile limit being enforced by Iceland had already created serious problems for the Association's members. (United States Embassy, Oslo, May 27, 1960.)



## Pakistan

## FISH OIL IMPORTS, 1958 AND 1959:

Imports of hardened fish oil by Pakistan decreased from about 108,800 pounds in 1958 to about 41,000 pounds in 1959, while the imports of other fish oils increased from 16,900 pounds in 1958 to 562,800 pounds in 1959.

In 1959, imports of 12,300 pounds of hardened fish oils from Norway were down sharply from the 106,600 pounds imported in 1958. However, Norway's

Pakistan's Imports of Fish Oils, 1958-1959		
Product	1959 <sup>1/</sup>	1958
	(In 1,000 Lbs. <sup>2/</sup> )	
<b>Fish Oil (hardened):</b>		
West Germany . . . . .	4	2.2
Norway . . . . .	12.3	106.6
United Kingdom . . . . .	28.3	-
Total . . . . .	41.0	108.8
<b>Fish Oil:</b>		
Norway . . . . .	562.8	-
West Germany . . . . .	-	16.9
Total . . . . .	562.8	16.9
Total all fish oils . . . . .	603.8	125.7
<sup>1/</sup> Estimated.		
<sup>2/</sup> Original data in quintals converted to pounds at 1 cwt = 112 pounds.		

exports of other fish oils to Pakistan jumped from zero in 1958 to about 563,000 pounds in 1959. (U. S. Foreign Agricultural Service Report, Karachi, April 18, 1960.)



## Peru

ANCHOVY FISHERMEN DISPUTE  
WITH REDUCTION PLANTS  
DECLARED ILLEGAL:

Peruvian plant and vessel owners have refused to meet demands of anchovy fishermen for a specified price per ton for anchovy and for social benefits. The Government declared the dispute illegal on May 21, 1960, and under this decision, fishermen must return to work or employers may replace them without legal obligation. The fishermen were due to return to work May 27, for a 25-day period, during which they intend to request reconsideration of their demands. (United States Embassy, Lima, May 27, 1960.)



## Philippines

## IMPORTS OF FISH OILS, 1959:

Total fish oil imports by the Philippines decreased to 154,600 pounds in 1959 as compared with 168,700 pounds in 1958. However, imports from the United States increased from 19,400 pounds in 1958 to 30,400 pounds in 1959. More was also received from Japan and other nations, but imports from Norway and Western Germany were off appreci-

## Philippines (Contd.):

Philippines' Imports of Fish Oils by Country of Origin, 1958-1959				
Country of Origin	Quantity		Value	
	1959	1958	1959	1958
	.(1,000 Lbs.)		.(US\$1,000)	
United States . . . . .	30.4	19.4	7.1	6.4
Norway . . . . .	63.5	91.4	7.5	11.1
West Germany . . . . .	0.5	10.8	0.5	1.4
Japan . . . . .	43.1	39.1	6.5	6.3
Others . . . . .	17.0	7.9	1.5	2.1
Total . . . . .	154.5	168.6	23.1	27.3

ably. (U. S. Foreign Agricultural Service Report, Manila, April 18, 1960.)

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#### CANNED SARDINE BIDS RECEIVED COMPLY IN PART WITH LABELING REQUIREMENTS:

Because Japanese suppliers were at first unwilling to comply with the Philippine National Marketing Corporation's (NAMARCO) labeling requirements, a NAMARCO spokesman reported that Japanese sardines would be boycotted in favor of United States or South African brands. This statement seemed to be borne out later when a special invitation to bid for 80,000 cases was issued for "American and South African Sardines Preferred."

Eight bids were received at the special opening on June 29, 1960, five of which were nevertheless for Japanese sardines, one for American, and two for South African. The price spread for all bids received was only 7 U.S. cents per case of 24 cans except for the California sardines which were US\$9.00 per case c.i.f. Manila compared with \$7.53 to \$7.60 for the other bids. All bidders complied in the same manner to the marking requirements by agreeing to emboss the word NAMARCO on the top of the tins only, but not on the bottom. Each Japanese supplier quoted two prices--one with the lids embossed, and one without the embossing at five cents a case less.

NAMARCO officials consider it a victory that the Japanese gave in on the embossing requirement. Undoubtedly Japanese firms will get at least part of the business because no single bidder

offered more than 20,000 cases. (United States Embassy, Manila, July 1, 1960.)

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#### LABELING OF CANNED GOODS IMPORTED BY NATIONAL MARKETING CORPORATION:

The new management of the National Marketing Corporation (NAMARCO), a government entity, prescribed new rules regarding labeling of goods which it imports starting with Invitation to Bid No. 2, dated April 22, 1960. This invitation requires that labels, whether imprinted or lithographed, should have a red, white and blue background with the identifying marks superimposed. The word "NAMARCO" must be embossed on top and bottom of tins and other containers. Extra labels equivalent to 1 percent of the total quantity ordered shall accompany the shipment, free of charge, in cases where the label is not lithographed on tins.

Prescribed labeling designs are attached for each commodity covered in the invitation--corned beef and two types of sardines. In addition to being embossed on the top and bottom of each tin container, the name NAMARCO must appear in large letters on the sides of the cans, with the result that the trade name is rather dwarfed in comparison.

NAMARCO officials stressed that this new plan is not an attempt to eliminate commercial labels completely and replace them with NAMARCO labels, but rather that the NAMARCO legend will be emphasized, while the personality of the brand will remain.

Already, however, NAMARCO is having difficulty with Japanese sardine suppliers over this new marking requirement. The Japanese claim that they cannot stamp the cans after the sardines have been packaged. They also state that they will not stamp them during the packaging process without a firm contract supported by a letter of credit from NAMARCO because of the danger that NAMARCO would not take all cans so marked, leaving the packers with sardines in NAMARCO tins which could not be sold elsewhere.

## Philippines (Contd.):

Representatives in the Philippines of major United States suppliers have expressed the same position privately and indicated their bids will all be subject to a waiver of the labeling requirements. Philippine press indicated some United States suppliers would comply. (United States Embassy, Manila, May 18, 1960.)



## Portugal

### SARDINE FISHERMEN SIGN WAGE AGREEMENT FOR 1960:

A wage agreement for 1960 was signed on April 26, 1960, following negotiations between Government representatives and delegates of the sardine fishing organizations. Details of the 1960 agreement were not published as of May 13, but it is understood that the terms of the agreement were about unchanged from those established for the Matosinhos fishermen in 1959. During the negotiations on the wage agreement various pending problems of the 15,000 sardine fishermen were resolved, the United States Consul at Oporto reported on May 13, 1960.



## Surinam

### FISHERIES TRENDS, MAY 1960:

Fish consumption is important in the Surinam diet. According to estimates of the Fisheries Service, per capita consumption of fresh fish is about 42.1 pounds as compared with 15.2 pounds of fresh meat. In addition, important quantities of dried, smoked, and salted fish are consumed. Domestic production of fishery products does not meet total demands and in each of the past two years fish and fish products valued at over US\$530,000 were imported. Landings of fish and small shrimp (seabob) for domestic consumption is estimated at about 4,000 metric tons (8.8 million pounds) of which about 3,600 tons are sold in markets and about 400 tons are caught and consumed.

The Government's fisheries development program aims at doubling the domestic production by 1965. Some 700-800 fishermen are estimated to be employed more or less full time in the domestic industry. The fishing areas are limited to the rivers, creeks, swamps, and estuaries of the coastal area. Primitive fishing methods are used exclusively. The small native canoes are not seaworthy or adequate for offshore fishing operations. While production can probably be moderately increased by present methods, any major expansion would doubtless depend upon offshore fishing with modern trawlers. The possibility of introducing trawlers for bottom fishing is being studied.

Surinam's only substantial export of fishery products is large offshore shrimp. The shrimp are caught by trawlers off the coast of Surinam and frozen and exported by a firm which has an exclusive export right. In 1959, shrimp valued at \$270,000 were exported as compared with about \$82,000 in 1958. Shrimp landings and exports in 1960 are expected to be considerably above those of 1959. In early 1960 the shrimp exporting firm gave up its exclusive export rights to fishery products other than shrimp, in return for which it obtained certain concessions including authority to improve and expand its plant facilities. With the early completion of an ice plant it expects to be able to service an expanded fleet of trawlers. About 9 trawlers were in operation during May 1960.

Shrimp are being fished in the waters off the Surinam coast by trawlers based in British Guiana and Trinidad as well as those based in Surinam's port of Paramaribo. (U. S. Consulate in Paramaribo, May 31, 1960.)



## Spain

### FIRST FISH FACTORYSHIP UNDER CONSTRUCTION:

Spain is in the process of building its first fish factoryship Maclina de Ciriza. The 4,300-ton vessel will be capable of



## Spain (Contd.):

catching and processing about 3,000 metric tons of fish which will be filleted and quick-frozen on board, according to Dansk Fiskeritidende, a Danish fishery trade periodical (*Fiskets Gang*, June 2, 1960.)



## Sweden

BIOLOGICAL EFFECTS OF  
RADIOACTIVE CONTAMINATION  
IN LAKES UNDER STUDY:

A Swedish west coast fishery research scientist for some years has been engaged in investigating the effect of the radioactive outflow from atomic reactors on water in Sweden. During a four-months trip in 1956 to England and United States, he studied the biological problems that the utilization of atomic power has created.

(United States Consulate, Goteborg, May 24, 1960.)

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CANNED FISH EXPORT CONTRACT  
WITH EAST GERMANY SIGNED:

The Swedish Fish Canners' Association has signed a contract with East Germany providing for export of canned fish, such as canned herring and anchovy, valued at 2,800,000 crowns (US\$540,400). The contract was signed at the Swedish Industries Fair, where East Germany for the first time was participating with an official exhibit. (United States Consulate, Goteborg, May 24, 1960.)

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FISH AND SHELLFISH  
LANDINGS, 1958-59:

The Swedish fishing fleet landed 250,062 metric tons of fish and shellfish at home and abroad in 1959, an increase of 16 percent as compared with

Table 1 - Fish and Shellfish Landings by Swedish Fishermen (Including Landings in Foreign Ports), 1958-59

Species	Quantity		Value			
	1959 .. (Metric Tons) ..	1958	1959 (Sw. Kr. 1,000)	1958	1959 .. (US\$1,000) ..	1958
<b>Herring, and Baltic Herring:</b>						
Herring .....	116,307	97,112	54,847	50,350	10,596	9,728
Baltic herring .....	19,721	19,370	11,078	10,511	2,140	2,031
<b>Total</b> .....	<b>136,028</b>	<b>116,482</b>	<b>65,925</b>	<b>60,861</b>	<b>12,736</b>	<b>11,758</b>
<b>Groundfish:</b>						
Cod .....	25,536	26,932	17,347	17,561	3,351	3,393
Haddock .....	4,476	5,987	4,912	5,717	949	1,104
Whiting .....	2,612	2,778	2,261	2,101	437	406
Ling .....	2,766	3,057	2,742	3,032	530	586
Other .....	5,088	5,086	4,165	4,490	805	867
<b>Total</b> .....	<b>40,478</b>	<b>43,840</b>	<b>31,427</b>	<b>32,901</b>	<b>6,072</b>	<b>6,356</b>
Mackerel .....	12,178	13,287	8,813	9,230	1,703	1,783
Sprat .....	4,071	2,188	3,786	3,670	731	709
Other (including shellfish) .....	1/11,368	9,113	39,647	32,754	7,660	6,328
Not specified .....	4,102	4,351	5,043	5,202	974	1,005
Industrial fish .....	41,832	25,945	7,616	4,452	1,471	860
<b>Total all fish</b> .....	<b>250,062</b>	<b>215,206</b>	<b>162,257</b>	<b>149,070</b>	<b>50,155</b>	<b>28,799</b>

1/Includes flatfish - 3,027 tons; eel - 2,239 tons; salmon - 1,305 tons; shellfish - 4,797.  
Note: (1) Preliminary data. (2) Values converted at rate of one Sw. Kr. equals US\$40.1932.

The Swedish scientist is now studying the biological effects of the radioactivity level in Lake Tvaren, which serves as the outlet for the atomic research institution at Studsvik. This check will be made by the Swedish Fisheries Board and the Radio Physical Institution, the latter is the top organization in Sweden concerned with protection from radioactivity. Similar control is also planned for Lake Magelungen, the outlet for the Agesta reactor, which will be Sweden's first atomic reactor for industrial use.

the 215,206 tons landed in 1958. The landings include fish for industrial purposes, such as for fish oil and fishmeal. This category represented over 16 percent of the total landings at home and abroad in 1959, and has in late years made up an increasing share of the total Swedish fish landings.

Landings at Swedish ports made up 67 percent of the total landings, while the remaining 33 percent were landed in Denmark, West Germany, and Great

## Sweden (Contd.):

Britain. Compared with 1958, the domestic landings increased by 14 percent and the foreign landings by 21 percent.

crowns (US\$6.5 million), compared with 29,655,000 crowns (\$5.7 million) in 1958. Eighty-one percent of the total value of the 1959 landings abroad came from Denmark, while 14 percent came from West Germany, and 5 percent from Great

Table 2 - Fish and Shellfish Landings in Swedish Ports, 1958-59

Species	Quantity		Value			
	1959 .. (Metric Tons) ..	1958	1959 .. (Sw. Kr. 1,000) ..	1958	1959 .. (US\$1,000) ..	1958
<u>Herring, and Baltic Herring</u>						
Herring .....	64,149	52,529	30,632	28,016	5,918	5,413
Baltic herring .....	19,721	19,370	11,078	10,511	2,140	2,031
Total .....	83,870	71,899	41,710	38,527	8,058	7,443
<u>Groundfish:</u>						
Cod .....	24,800	26,329	16,815	17,163	3,249	3,316
Haddock .....	3,942	5,287	4,489	5,221	867	1,009
Whiting .....	2,124	2,246	1,917	1,754	370	339
Ling .....	2,730	3,034	2,720	3,019	526	583
Other .....	3,859	4,297	3,308	3,917	639	757
Total .....	37,455	41,193	29,249	31,074	5,651	6,003
Mackerel .....	7,474	8,416	5,987	6,317	1,157	1,220
Sprat .....	3,937	2,111	3,700	3,572	715	690
Other (including shellfish) .....	1/11,306	9,077	29,566	32,695	7,644	6,317
Not specified .....	3,816	4,209	4,754	5,087	918	983
Industrial fish .....	21,111	11,533	3,652	2,143	706	414
Total all fish .....	168,969	148,438	128,618	119,415	38,558	36,518

1/Includes: flatfish - 2,965 tons; eel - 2,239 tons; salmon - 1,305 tons; shellfish - 4,797 tons.

Note: Values converted at rate of one Sw. Kr. equals US\$0.1932.

The total value of the 1959 landings, including fish for industrial purposes, amounted to US\$31.3 million as compared with \$28.8 million in 1958, an increase of 9 percent. Landings in foreign ports accounted for the largest part of this increase and the total value of the foreign landings increased by 13 percent, while the landings in Sweden increased by 8 percent.

Total landings in Sweden increased from 148,438 tons in 1958 to 168,932 tons in 1959. The increase originates from the West and East Coast areas, where the landings increased by 25 and 3 percent, respectively, while the landings on the South Coast dropped by 6 percent.

The total quantity of fish landed in foreign ports by Swedish fishermen in 1959 amounted to 81,093 metric tons as compared with 66,768 tons in 1958. The larger part, or almost 70,000 metric tons, was landed in Danish ports. Of those landings, herring comprised 61 percent, while industrial fish made up almost 30 percent. Landings in West Germany and Great Britain also consisted chiefly of herring.

The total value of the foreign landings in 1959 amounted to 33,639,000

crowns, as compared with 90, 5, and 5 percent, respectively, in 1958.

The average price for fish landed in Sweden in 1959 (excluding industrial fish) amounted to 0.85 crown a kilo (7.4 U. S. cents a pound), the same as in 1958. The average price for the 1959 catch (including landings in foreign ports but excluding industrial fish) was somewhat lower than in 1958--0.74 crown a kilo (6.5 U. S. cents a pound) in 1959 as against 0.76 crown a kilo (6.7 U. S. cents a pound) in 1958. The average price for herring landed in Swedish ports was 0.48 crown a kilo (4.2 U. S. cents a pound), somewhat higher than the 0.46 crown a kilo (4.1 U. S. cents a pound) for herring landed in foreign ports by Swedish fishermen. (United States Consulate at Goteborg, May 18, 1960.)

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#### FISHERMEN HOPE TO REACH AN AGREEMENT WITH NORWAY ON 12-MILE LIMIT:

Swedish west coast commercial fishermen have hope of reaching a bilateral agreement with Norwegian authorities which will permit Swedish trawlers to fish up to 4 nautical miles off the south coast of Norway and up to a level with Lindesnes. This optimism was expressed

## Sweden (Contd.):

by an official of the West Coast Fishermen's Central Association when queried by the Goteborg press about the announcement made on May 13, 1960, by the Norwegian Minister of Foreign Affairs to the effect that Norway will establish a 12-mile fishing limit.

The Swedish fishery official was also quoted as saying that the matter chiefly concerns Swedish shrimp fishermen from the northern part of the province of Bohuslan. These fishermen would lose catches valued at about 5 million crowns (about US\$965,000) yearly if they were barred from their customary fishing grounds by a Norwegian 12-mile limit.

In occasional years, Swedish fishermen also fish for sprat and herring within 12 miles from the Norwegian south coast. It is very seldom, however, that Swedish fishermen come inside the 12-mile zone off the Norwegian west coast.

The Swedish fishery representative also said that through his contact with the Norwegian fishery associations he had learned that Norwegian west and north coast commercial fishermen had pressed for a 12-mile limit. The Norwegian south coast fishermen, however, had no desire to drive Swedish fishermen from their traditional shrimp fishing grounds, the United States Consul at Goteborg reported on May 17, 1960.

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#### FISHING INDUSTRY AND EUROPEAN FREE TRADE ASSOCIATION:

The Swedish fishery industry today is facing changes that may be of decisive importance to its continued development, according to the economist of the West Coast Fishermen's Central Association writing in *Svenska Vastkust-fiskaren* ("Swedish West Coast Fisherman"), the organ of the association.

In depicting what he terms "the muddled situation," he cites as characteristic the dissolution of the 1954 Government fishery investigation committee, the principal reason for this action be-

ing that the European Free Trade Association (EFTA) had become operative on July 1 of this year, and will affect the Swedish fishery industry to an extent which cannot yet be foreseen.

The committee, the economist says, agreed unanimously that a price regulating system for fisheries was also necessary in the future. This question, he says, will now be investigated by the Swedish Board of Agriculture, which has been commissioned by the Minister of Agriculture to examine the matter of preparing such a price regulating system, in collaboration with representatives of the fishery industry and other interested parties.

In discussing the impact of the establishment of the free trade area on Swedish fisheries, the economist cited as the most immediate consequence the circumstance that on July 1 this year the import fees for frozen fish fillets were reduced by 20 percent as well as the customs duty on canned fish, while at the same time new global contingents, intended to facilitate imports, were introduced for frozen fish fillets, spiced sprat, etc., which are not subject to any fees.

In looking ahead the economist can only envisage that the free trade area means "disturbing prospects" for the Swedish fishing industry. His fears are based mostly on the fact that the free trade area includes Sweden's two largest fish suppliers, namely Norway and Denmark.

His only solution is that the fishery industry must demand that the authorities give the industry financial compensation through price-regulating funds or appropriations of other kinds. He recalled that at the end of April this year the government submitted a proposition to the Riksdag (Congress) including an allotment of 25 million crowns (US\$4.8 million) to the regulating associations of agriculture to cover costs in connection with the reduction of certain agricultural raw material to world market prices, made necessary by EFTA. It is anticipated, he says, that further measures may be required. On behalf of the

## Sweden (Contd.):

West Coast fishery industry he has discussed the question with the Board of Agriculture, but there is no result as yet, he reports.

He also points out that the Swedish fishery industry, in addition to being a member of a free trade group which includes the industry's most serious competitors, has at the same time been left standing outside the European Common Market which includes some of the industry's largest customers, principally West Germany.

will be 750 metric tons; for fishoil, 2,000 tons. Compared with the 1959 marketing year, this indicates a relatively stable production (table 1).

**Exports:** Slight change is indicated in Sweden's marine-oil exports, as it was estimated that Sweden would export 6,000 metric tons of whale oil in the 1960 marketing year as compared with 5,744 tons in the 1959 marketing year; 1,500 tons of fish oil in 1960 as compared with 1,471 tons in 1959 (table 2).

**Imports:** In 1959, the United States was Sweden's greatest single source of

Table 1 - Sweden's Supply and Disappearance of Edible Marine Oils for Marketing Years 1958/59-1959/60 (Ending August 31)

Item	Estimated 1959/60				1958/59			
	Fish-Liver Oil	Whale Oil	Fish Oil	Total	Fish-Liver Oil	Whale Oil	Fish Oil	Total
(Metric Tons)								
Opening stocks 9/1 . . . . .	100	11,569	3,630	15,299	100	13,467	5,635	19,202
Production (crude only) . . . .	750	-	2,000	2,750	700	-	1,900	2,600
Imports . . . . .	900	26,000	7,000	33,900	1,883	1/26,241	1/5,135	1/32,259
Total supply & disappearance . .	1,750	37,569	12,630	51,949	1,683	39,708	12,670	54,061
Exports . . . . .	-	2/6,000	1,500	7,500	-	2/5,744	1,471	7,215
Domestic disappearance . . . .	1,650	20,525	8,000	30,175	1,583	22,395	7,569	31,547
Ending stocks 8/31 . . . . .	100	11,044	3,130	14,274	100	11,569	3,630	15,299

1/Distribution by types partly estimated for September-December 1958.

2/Exported as hydrogenated.

It is now evident, he says, that as early as at the turn of the year the six-state Common Market will begin building an outer customs barrier affecting herring and fish, among other things. He cannot foresee at the present time to what extent this will affect Sweden's direct landings as well as commercial exports, but it is hardly an exaggeration, he says, to characterize the prospects as disturbing.

The bright aspects of the picture, as seen by the economist, are that the Swedish fishery industry is at present undergoing a rationalization which will increase its international competitive power, and the West Coast fishermen have established powerful trade and economic organizations through which they have mediums that will look after their interests. (United States Embassy, Goteborg, report of June 1, 1960.)

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#### MARINE-OIL PRODUCTION, FOREIGN TRADE, AND CONSUMPTION:

**Production:** For the marketing year ending August 31, 1960, it is estimated that Sweden's production of fish-liver oil

marine fats and oils. This situation should continue, as a new demand has been created for oils with a high percentage of unsaturated acids and United States menhaden oil is included among them.

Table 2 - Sweden's Exports of Marine Oils by Type and Country of Destination, Calendar Year 1959

Type and Origin	Quantity
	Metric Tons
<b>Herring oil, raw:</b>	
Norway . . . . .	1,890
West Germany . . . . .	315
Denmark . . . . .	513
Austria . . . . .	10
Italy . . . . .	33
Total . . . . .	2,761
<b>Other fats and oils from fish and marine-mammals:</b>	
Belgium . . . . .	8
Greece . . . . .	1
Total . . . . .	9
Grand total . . . . .	2,770

Sweden received 16,927 metric tons of marine fats and oils from the United States in 1959. The bulk of marine fats and oils imported by Sweden in 1959 were refined products, however; considerable amounts of whale oil and herring oil were imported unrefined.

Marine-oil imports by Sweden in marketing year 1960 are expected to increase slightly.

## Sweden (Contd.):

**Consumption:** During the 1959 marketing year ending August 31, a total of 25,689 metric tons of marine oils were used for food as compared with 5,858 tons used for technical purposes. Margarine production consumes the bulk (25,350 tons) of the marine oils in Sweden, and increased use of marine oils can be anticipated as margarine production is expected to increase by 7,000 tons in 1960. The balance of the marine oils used for food are used in baking, fat emulsions and mayonnaise, and frying fats.

Table 3 - Sweden's Imports of Marine Oils by Type and Country of Origin, Calendar Year 1959

Type and Origin	Quantity Metric Tons
<b>Whale Oil, Raw:</b>	
The Netherlands . . . . .	956
Norway . . . . .	5,102
Total . . . . .	6,058
<b>Sperm Oil, Raw:</b>	
Norway . . . . .	100
Great Britain . . . . .	54
Total . . . . .	154
<b>Seal Oil, Raw:</b>	
Norway . . . . .	17
Denmark . . . . .	3
Total . . . . .	20
<b>Herring Oil, Raw:</b>	
Norway . . . . .	87
Western Germany . . . . .	3,755
Denmark . . . . .	763
Iceland . . . . .	1,647
Total . . . . .	6,252
<b>Vitaminized Oil Products:</b>	
Norway . . . . .	16
Japan . . . . .	52
Total . . . . .	68
<b>Medical and Veterinary Oil:</b>	
Norway . . . . .	853
Iceland . . . . .	37
Great Britain . . . . .	54
Denmark . . . . .	91
Total . . . . .	1,035
<b>Other Fats and Oils from Fish and Marine Mammals (Also Refined):</b>	
Norway . . . . .	654
Western Germany . . . . .	3,112
Peru . . . . .	488
United States . . . . .	16,927
Denmark . . . . .	48
Total . . . . .	21,229
<b>Grand Total</b> . . . . .	<b>34,816</b>

**Prices:** C.i.f. wholesale prices as of March 31, 1960, for crude hydrogenated whale oil were 2.30 kronor a kilogram (20 U. S. cents a pound) and for refined 2.44 kronor a kilogram (21 U. S. cents a pound). Swedish importers paid an average of 1.13 kronor a kilogram (10 U. S. cents a pound) for whale oil in 1959, and 1.08-1.13 kronor a kilogram (9.5-10.0 U. S. cents a pound) in January-

March 1960. (United States Embassy, Stockholm, April 20, 1960.)

Note: Values converted at rate of 1 krona equals US\$0.193.

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# PROHIBITION ON SALES OF ICELANDIC HERRING REMOVED FOR 1960:

The Swedish Agricultural Marketing Board has announced that there will be no prohibition in Sweden against the sale of imported Icelandic herring in 1960. Such a prohibition has in previous years been in effect during a certain period in the fall in order to protect the sales of North Sea (Fladen) herring landed by Swedish fishermen.

In commenting on this action, a representative of the West Coast Fishermen's organization stated that Swedish North Sea (Fladen) fishermen do not have any complaint against competition with Icelandic herring caught by other Swedish fishermen and landed in Sweden. They do, however, consider it unwise to permit the sale of imported Icelandic herring during a period when there usually is a good supply of North Sea herring available in Sweden. He said further that the sales prohibition, that had been in effect in previous years, had favored the trade with herring, and he asserted that even dealers in salted herring are in favor of the sales prohibition. (U. S. Consulate in Göteborg, May 17, 1960.)



## Thailand

### COD-LIVER OIL IMPORTS INCREASE:

Imports of cod-liver oil by Thailand increased to 26,153 gallons valued at US\$35,048, in 1959 as compared with 12,945 gallons valued at US\$22,048 in 1958. Imports of other marine-animal oils in both years were valued at less than US\$1,000. The average price paid for cod-liver oil imports in 1959 was down about 21 percent from the preceding year.

The tariff duties of Thailand pertaining to fats and oils (including fish and marine animal oils), whether or not re-



## Thailand (Contd.):

fined, were revised on March 3, 1960. Both an ad valorem and a specific duty now exist; the higher of the two is paid. The ad valorem rate for edible marine oils is 22 percent of the value or a specific rate of 21.1 U. S. cents a kilo (9.6 cents a pound). Inedible marine oils have an ad valorem rate of 22 percent or a specific rate of 3.2 cents a kilo (about 1.5 cents a pound).

Thailand's exports of fish and marine-animal oils are very negligible. (Foreign Agricultural Service Report, Bangkok, April 11, 1960.)



## U. S. S. R.

FIRST FISH CANNING  
FACTORYSHIP LAUNCHED:

On April 20, 1960, the Soviet Union's first fish canning factoryship, the Andrej Zakharov, was launched according to a report in Leningradskaja Pravda of April 21. The ship is 162 meters (531.4 feet) long and displaces 15,300 tons and will be stationed in Vladivostok. It is designed for an annual capacity of 25 million cans, 105 tons of caviar or other fish roe, and 126 tons of fish oil. (Fiskets Gang, May 19, 1960.)

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LITHUANIAN FISHERIES TRENDS,  
APRIL 1960:

In 1960, the Lithuanian fisheries are scheduled to produce over 100,000 metric tons. The landings during the first quarter of 1960 indicate that this goal will be reached before the end of the year, according to a report by the Chief, Directorate for the Fishing Industry of the Lithuanian Regional Economic Council, published in Sovjetskaja Litva of April 10, 1960.

In 1959, the whole of the catch of ocean perch was landed salted. This year most of the catch will be landed frozen. Preparations for the herring fishery which begins in July are under way. Part of the fleet will go to Iceland to fish with gill nets, and another part

will trawl in the North Sea. Cod fishing will be conducted on new grounds off Greenland and in Davis Strait, and there will be trawling for herring in the Norwegian Sea. (Fiskets Gang, May 19, 1960.)



## United Kingdom

WHITE FISH AUTHORITY  
INCREASES INTEREST RATES ON  
FISHERY LOANS AS OF MAY 13:

The British White Fish Authority, as a result of increases in the rates of interest charged to them by the Treasury, increased its rates on fishery loans on May 13, 1960.

The new rates are: On loans for not more than 5 years,  $5\frac{1}{2}$  percent; increase  $\frac{1}{8}$  percent. For more than five years but not more than 10 years,  $5\frac{3}{4}$  percent; increase  $\frac{1}{4}$  percent. For more than five years but not more than 15 years,  $6\frac{1}{4}$  percent; no change. For more than 15 years  $6\frac{1}{4}$  percent; increase  $\frac{1}{8}$  percent.

The new rates do not apply where the final installment of a loan or interim installments in current cases were paid by the Authority before May 13. (The Fishing News, May 27, 1960.)

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PRODUCTION, IMPORTS, AND  
CONSUMPTION OF WHALE  
OIL, 1958 AND 1959:

Imports of whale oil by the United Kingdom decreased from 86,400 long tons in 1958 to 81,700 tons in 1959<sup>1/</sup>. Britain's Antarctic whale-oil production also decreased, from 49,000 tons in 1958 to 30,500 tons in 1959. In addition, production from the Falkland Islands totaled 6,700 tons in 1958 and 6,300 tons in 1959.

British margarine consumption increased 1.6 pounds per capita in 1959 and considerably larger quantities of refined whale oil were diverted to this use--from 80,000 tons in 1958 to 91,000 tons in 1959. In 1959, 45,000 tons of whale oil were used in cooking fat, as compared with 47,000 tons in 1958.

<sup>1/</sup>These figures no longer include oil produced from British whaling operations.

## United Kingdom (Contd.):

The use of crude whale oil increased from 138,600 tons in 1958 to 149,700 tons in 1959. (U. S. Foreign Agriculture Service Report, London, April 14, 1960.)



## Uruguay

## FISH MEAL PRODUCTION EXPECTED TO INCREASE SLIGHTLY:

In 1959, Uruguay produced 900 metric tons of fish meal. It is estimated that this production will increase to 1,000 tons in 1960 and to 1,200 tons in 1961. It is expected that any increased production will be utilized domestically in animal feed. (U. S. Foreign Agricultural Service Report, Montevideo, April 13, 1960.)



## SCALLOPS

Approximately 20,000 people from all parts of the country attended the Third Annual Scallop Festival at Marine Park in New Bedford, Mass., August 12, 13, and 14, 1960. Scallops



New England scallop supper.

are generally an exceptionally good buy. They are very nutritious--contain high levels of well-balanced protein, very little fat, and many of the minerals and vitamins so necessary for the good health of all members of the family.

Scallops can be served in various ways, including cocktails, appetizers, soups, salads, broiled, fried, or in combination dishes. A typical combination dish, which is both appetizing and economical, is "New England Scallop Supper," as recommended by the home economists of the U. S. Bureau of Commercial Fisheries.

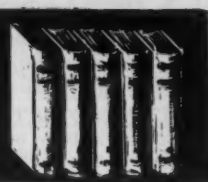
## NEW ENGLAND SCALLOP SUPPER

2 pounds scallops, fresh or frozen	$\frac{1}{4}$ cup flour
2 quarts boiling water	1 teaspoon salt
$\frac{1}{2}$ cup salt	2 cups milk
6 medium baking potatoes	1 cup cooked peas
	$\frac{1}{4}$ cup butter or other fat

Thaw frozen scallops. Remove any shell particles and wash. Place in boiling salted water. Cover and return to the boiling point. Simmer for 3 to 4 minutes, depending on size. Drain. Cut large scallops in half. Wash potatoes. Bake potatoes in a hot oven, 425° F., for 45 to 60 minutes or until soft. Melt butter; blend in flour and salt. Add milk gradually and cook until thick and smooth, stirring constantly. Stir in peas and scallops. Heat. Cut a cross in the top of the baked potatoes with a pointed knife. Squeeze the potatoes so that the interior will be exposed. Serve scallop mixture over potatoes. Serves 6.



# FEDERAL ACTIONS



## Interdepartmental Committee

### on Trade Agreements

#### TRADE-AGREEMENT NEGOTIATIONS UNDER GATT INCLUDE FISHERY PRODUCTS:

Notice of intention of the United States to conduct trade agreement negotiations under the General Agreement on Tariffs and Trade with foreign governments which are contracting parties to that agreement and with the Governments of Israel, Spain, Switzerland, and Tunisia was published in the Federal Register of May 28, 1960.

Annexed to the notice was a list of articles imported into the United States to be considered for possible modification of duties or other import restrictions, imposition of additional import restrictions, or specific continuance of existing customs or excise treatment in the trade agreement negotiations. Fishery products and related products are included in the list, such as marine-animal oils; netting; fish-liver oils; dressed swordfish; fish fillets and steaks; dried fish; canned smoked sardines in oil over 30 cents per pound; other specialty canned fishery products such as anchovies, fish balls, cakes, etc.; certain types of pickled or salted fish; certain types of smoked or kippered fish; etc.

Persons interested in export articles also were requested to express their views regarding any tariff or other trade concessions that might be requested of foreign governments with which negotiations are to be conducted, whether or not such articles are included in the list of export articles on which the United States is considering requesting such concessions. The list of export articles was issued May 28 by the Department of State in its Publication No. 6987. Sever-

al fishery products or related products are included in the list.

Notes: See pp. 39-41 of this issue.



## Committee for Reciprocity Information

#### TRADE-AGREEMENT NEGOTIATIONS UNDER GATT INCLUDE FISHERY PRODUCTS:

Notice for submission of information to the Committee for Reciprocity Information in regard to trade-agreement negotiations under GATT was published in the May 28, 1960, Federal Register. The notice pointed out that closing date for application to appear at the hearing and for submission of briefs was June 27. The hearing opened on July 11, 1960. Persons or groups interested in import articles were requested to present to the Committee their views concerning possible tariff concessions by the United States on any article, whether or not included in the list annexed to the notice of intention to negotiate of the Interdepartmental Committee on Trade Agreements. Persons or groups interested in export articles were also requested to present their views regarding any tariff or other trade concessions that might be requested of the foreign governments with which negotiations are to be conducted, whether or not the articles are included in the list of export articles published by the Department of State. Certain fishery products are included in both the import and export list.

Notes: See pp. 39-41 of this issue.



## U. S. Tariff Commission

### "PERIL POINT" INVESTIGATION OF IMPORTED ARTICLES TO BE CONSIDERED IN TRADE-AGREEMENT NEGOTIATIONS UNDER GATT:

Concurrently with the announcement of the Interdepartmental Committee on Trade Agreements concerning proposed trade agreement negotiations, the President furnished the U. S. Tariff Commission a list of articles imported into the United States to be considered in the proposed trade agreement negotiations under GATT, and requested the Tariff Commission to make a "peril point" investigation and report with respect to each such article, as provided in section 3 of the Trade Agreements Extension Act of 1951, as amended. The notice of the Commission's investigation and hearings appeared in the Federal Register of May 28, 1960. The final date for filing requests to testify and written statements was June 27. The public hearings began on July 11, 1960.

The purpose of the Commission's investigation is to obtain the facts necessary to enable the Commission to formulate findings (known as "peril point" findings) for inclusion in a report to the President with respect to each article included in the President's list as to (1) the limit to which the modification of duties and other import restrictions, imposition of additional import restrictions, or specific continuance of existing customs or excise treatment may be extended in order to carry out the purpose of Section 350 of the Tariff Act of 1930, as amended (Trade Agreements Act), without causing or threatening serious injury to the domestic industry producing like or directly competitive articles, and (2) if increases in duties or additional import restrictions are required to avoid serious injury to the domestic industry producing like or directly competitive articles, the minimum increases in duties or additional import restrictions are required.

It was pointed out that oral testimony and written statements received by the Commission will be available to the Committee for Reciprocity Information, so that appearance before both the Committee and the Commission, although permissible, was not necessary. Likewise testimony and statements received by the Committee will be available to the Commission.

Note: See pp. 39-41 of this issue.

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### HEARINGS ON EFFECT OF IMPORTS OF HARD FIBER CORDS AND TWINES ON DOMESTIC INDUSTRY:

Upon application of the Cordage Institute, New York, N. Y., received June 10, 1960, the U. S. Tariff Commission, on June 24, 1960, under the authority of section 7 of the Trade Agreements Extension Act of 1951, as amended, instituted an investigation to determine whether cords and twines<sup>1</sup> provided for in paragraph 1005(b) of the Tariff Act of 1930, are, as a result in whole or in part of the duty or other customs treatment reflecting concessions granted thereon under the General Agreement on Tariffs and Trade, being imported into the United States in such increased quantities, either actual or relative, as to cause or threaten serious injury to the domestic industry producing like or directly competitive products.

A public hearing in connection with this investigation will be held on September 28, 1960, in the Hearing Room, Tariff Commission Building, Washington, D. C. Interested parties desiring to appear and to be heard at the hearing should notify the Secretary of the Commission, in writing, at least five days in advance of the date set for the hearing.

<sup>1</sup>/Cords and twines (whether or not composed of three or more strands, each strand composed of two or more yarns), tarred or untarred, single or plied, wholly or in chief value of henequen, manila (abaca), sisal, or other hard fiber.



## Department of Health, Education, and Welfare

### FOOD AND DRUG ADMINISTRATION

#### EFFECTIVE DATE EXTENDED FOR STATUTE FOR CERTAIN FOOD ADDITIVES:

The Commissioner of Food and Drugs, pursuant to authority provided in the Federal Food, Drug, and Cosmetic Act (sec. 6(c), Pub. Law 85-929; 72 Stat. 1788; 21 U.S.C., note under sec. 342) authorizes the use in foods of certain additives for which tolerances have not yet been established or petitions therefore denied. On the basis of data supplied and findings that no undue risk to the public health is involved and that conditions exist that make necessary the prescribing of an additional period of time for obtaining tolerances or denials of tolerances or for granting exemptions from tolerances, certain additives may be used in food under certain specified conditions for a period of 1 year from March 6, 1960, or until regulations shall have been issued establishing or denying tolerances or exemptions from the requirement of tolerances, in accordance with section 409 of the Act, whichever occurs first.

Two separate documents on this subject appeared in the June 15 Federal Register. The two documents contain an extensive list of food additives (about 250 items), mostly flavoring substances and natural substances used in conjunction with flavors. The lists give the common and botanical or zoological name of source for each substance.



## Department of the Interior

### FISH AND WILDLIFE SERVICE

#### BUREAU OF COMMERCIAL FISHERIES

#### ALASKA REGIONAL DIRECTOR NAMED TO FILL REGIONAL FISHERIES POST IN NORTH ATLANTIC REGION:

The appointment of John T. Gharrett, Regional Director of the Bureau

of Commercial Fisheries in Alaska, as Director of the Bureau's Regional Office (Region 3) in Gloucester, Mass., was announced June 21, 1960, by Assistant Secretary of the Interior Ross Leffler.

Gharrett replaces Joseph F. Puncchar who resigned July 5 to become Director of Research for the Maine Sardine Council.

Puncchar, an employee of the Fish and Wildlife Service for a quarter of a century, has been in charge of Bureau operations in the North Atlantic Region since the office was established in 1958. In his new position, he will be located in Bangor, Maine.

Gharrett has been employed in fisheries research and management since 1940. He has been with the International Pacific Halibut Commission, Oregon State Fish Commission, Pacific Marine Fisheries Commission, and the Bureau of Commercial Fisheries. He came to the Bureau in October 1955, and was attached to Alaska activities with headquarters in Juneau.

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#### PROPOSED REVISION OF PROHIBITION TO FISH FOR SALMON WITH ANY NET IN NORTH PACIFIC:

In order to provide identical coverage with that provided the Pacific Coast States, a revision was proposed of the U. S. Department of the Interior regulation prohibiting to fish for or take salmon with any net in the North Pacific. Interested persons had until July 9 to submit comments, suggestions, or objections to the proposed amendments. The proposed revision as it appeared in the June 9 Federal Register follows:

## DEPARTMENT OF THE INTERIOR

### Fish and Wildlife Service

#### [ 50 CFR Part 130 ]

#### NORTH PACIFIC AREA

#### Definition; Salmon Fishery Prohibition

Notice is hereby given that pursuant to the authority vested in the Secretary of the Interior by section 12 of the act of August 12, 1954 (68 Stat. 700; 16 U.S.C. 1031), it is proposed to amend 50 CFR Part 130 as set forth below. The



purpose of the amendment is to extend the boundaries of the area where it is prohibited to fish for or take salmon with any net and to define the term North Pacific area.

Such fishing has been prohibited by Federal regulations since 1957 under authority of the North Pacific Fisheries Act as far west as longitude 175 degrees west.

In order to provide identical coverage with that provided the Pacific Coast States, it is now proposed to extend the prohibition against such fishing throughout the North Pacific area.

It is the policy of the Department of the Interior whenever practicable, to afford the public an opportunity to participate in the rule making process. Accordingly, interested persons may submit written comments, suggestions, or objections with respect to the proposed amendments to the Bureau of Commercial Fisheries, Washington 25, D.C., within thirty days of the date of publication of this notice in the FEDERAL REGISTER.

(Sec. 1, 68 Stat. 698, as amended; 16 U.S.C. 1021 et seq.)

ROSS LEFFLER,

Assistant Secretary of the Interior.

JUNE 3, 1960.

Part 130—North Pacific Area, would be revised as follows:

#### § 130.1 Definition.

For the purpose of the regulations of this part the North Pacific area is defined to include all waters of the North Pacific Ocean and Bering Sea north of 48 degrees 30 minutes north latitude, exclusive of waters adjacent to Alaska north and west of the International Boundary at Dixon Entrance which extend three miles seaward (a) from the coast, (b) from lines extending from headland to headland across all bays, inlets, straits, passes, sounds and entrances, and (c) from any island or groups of islands, including the islands of the Alexander Archipelago, and the waters between such groups of islands and the mainland.

#### SALMON FISHERY

#### § 130.10 Salmon fishing prohibited, exception.

No person or fishing vessel subject to the jurisdiction of the United States shall fish for or take salmon with any net in the North Pacific area, as defined in this part: *Provided*, That this shall not apply to fishing for sockeye salmon or pink salmon south of latitude 49 degrees north.

#### BUREAU OF INDIAN AFFAIRS

#### REVISION PROPOSED OF COMMERCIAL FISHING REGULATIONS FOR RED LAKE INDIAN RESERVATION:

A proposed revision of the commercial fishing regulations for the Red Lake Indian Reservation, Minnesota, appeared in the Federal Register of May 28, 1960. The principal revisions in the regulations include application of a maximum annual quota to yellow or walleye pike,

the main species, rather than to all game fish; and prohibits the taking of yellow and northern pike (pickerel) during their spawning season except for propagation purposes. The remaining revisions are primarily for the purpose of clarification and to eliminate functions of the Red Lake Fisheries Association from the regulations.

Interested persons had until June 27, 1960, to submit comments, suggestions, or objections.

\* \* \* \* \*

#### ALASKAN INDIAN COMMERCIAL FISHING REGULATIONS, 1960:

Regulations have been issued by the Bureau of Indian Affairs of the U. S. Department of the Interior to perpetuate certain fishing rights long recognized by Federal statutes, regulations, and custom and secured to the Alaska Eskimos, Indians and Aleuts by section 4 of the Alaska Statehood Act of July 7, 1958. The regulations were published in the June 2, 1960, Federal Register and became effective on the date of publication.

The proposed regulations appeared in the April 9, 1960, Federal Register. Interested persons were given an opportunity to submit their views, data, or arguments in writing, to the Bureau of Indian Affairs by May 9, 1960. Several comments regarding the proposed regulations were received. They dealt mainly with the sections providing for the authorization of fish trap operation by three native communities of Kake, Angoon, and Metlakatla, and the declaration of an exclusive fishery at the Karluk Reservation. Written comments, suggestions, and objections were considered. In addition, in response to their request to be heard, an opportunity was extended to seven Alaska cannery operators operating in Kodiak Island to orally present their view on the proposed regulations pertaining to the Karluk Reservation. Further, the views of the native inhabitants of the Karluk Reservation were sought as to their plans and desires for the utilization of reservation waters for the 1960 fishing season.

The regulations revise and clarify the language of the section on restrictions on Indian traps pertaining to the locations and periods in which traps may be operated. The wording in §88.2(a) as published would allow the operation of Indian traps at any time fishing was allowed by the State in the established fishing section in which the traps are located or at any time fishing was allowed in the adjacent district. The newly-proposed wording would key the trap fishing season in each section to the periods in which purse-seine fishing is permitted by the State in the respective sections, with one exception. In the case of Metlakatla traps the fishing season would be keyed to the purse-seine fishing season in the Southeast Section of Clarence Strait, and also to the seining season in the adjacent general section of the Southern District, since relatively little purse-seining is conducted in the South East Section of Clarence Strait.

The section on commercial fishing on the Karluk Indian Reservation has revised language in accordance with comments received from the natives of Karluk Reservation and others, to provide that the waters of the Karluk Indian reservation shall be open to native inhabitants of the village of Karluk and vicinity and to other persons insofar as the fishing activities of the latter do not restrict or interfere with fishing by such natives. Further, the newly-worded section provides for the use of beach seines up to 250 fathoms in length by natives and, prior to July 1, for their fishing up to within 100 yards of the mouth of the Karluk River.

The regulations as published include sections on scope; restrictions on Indian fish traps, size and operation of Indian salmon traps; definition Karluk Indian Reservation; commercial fishing, Karluk Indian Reservation; commercial

salmon fishing by native Indians in the Yukon and Kuskokwim Rivers; personal use fishing by native Indians; modification of regulations; and enforcement.



## Department of Labor

WAGE AND HOUR AND PUBLIC CONTRACTS DIVISION

### INTERPRETATION OF FISHERIES INDUSTRIES EXEMPTIONS UNDER FAIR LABOR STANDARDS ACT DEFENDED:

The Department of Labor's interpretation of exemptions from the Fair Labor Standards Act for employees in the fishery and seafood industries was contained in an interpretative bulletin issued by the Administrator of the Department's Wage and Hour and Public Contracts Division. Two exemptions are interpreted. One is a minimum-wage and overtime pay exemption for workers employed in catching, processing, distributing, and performing other specified operations on fish and other aquatic products. The other exemption is one from the overtime-pay provisions--but not the minimum-wage requirements--applying to workers employed in canning fish and other aquatic products.

In response to a letter from Senator Byrd of Virginia protesting the Department's interpretation of the fishery industries exemptions, Acting Secretary of Labor James O'Connell wrote:

"This is in reply to your letter of May 31, 1960, in which you state it is your opinion that the fishery and seafood exemptions contained in the Fair Labor Standards Act apply to the entire industry and that the Department's Interpretative Bulletin, Part 784, giving a more limited scope to the exemptions should be rescinded and inspections of seafood plants should be stopped.

"The Interpretative Bulletin, referred to, was issued after careful study and with a full awareness of the views of the members of the seafood industry. The Department feels that the position taken therein, namely that the exemptions (Sections 13(a)(5) and 13(b)(4) are limited to the enumerated employee activities is supported by the language of the exemptions, the legislative history and pertinent court decisions. The Court of Appeals for the First Circuit in arriving at the same conclusion in the case of *Mitchell v. Calvin Stinson d/b/a Stinson Canning Company*, 217 F(2) 210, predicated its decision on the aforesaid grounds.

"In view of the foregoing, and having in mind the admonition of the Supreme Court of the United States that exemption from this humanitarian Act must 'be narrowly construed' and applied only to those 'plainly and unmistakably within its terms and spirit' (*Phillips Co. v. Walling*, 324 U.S. 490) and that exemption should not be enlarged by implication (*Addison v. Holly Hill Co.*, 322 U.S. 607), I do not feel there is justification for adopting the courses of action you recommend."

Notes: Also see *Commercial Fisheries Review*, April 1959 p. 98.



## Department of the Treasury

### FISH BLOCKS FROM ICELAND NOT SOLD AT LESS THAN FAIR VALUE:

Fish blocks from Iceland are not being sold in the United States at less than fair value, according to a determination of the Department of the Treasury pub-

lished in the Federal Register of June 15. The finding was as follows:

## DEPARTMENT OF THE TREASURY

Office of the Secretary

[AA 643.3]

### FISH BLOCKS FROM ICELAND

Determination of No Sales at Less Than Fair Value

JUNE 9, 1960.

A complaint was received that fish blocks from Iceland were being sold to the United States at less than fair value within the meaning of the Antidumping Act of 1921.

I hereby determine that fish blocks from Iceland are not being, nor are likely to be, sold in the United States at less than fair value within the meaning of section 201(a) of the Antidumping Act, 1921, as amended (19 U.S.C. 160(a)).

*Statement of reasons.* The fish blocks in question were imported by a subsidiary of the foreign seller and were not resold in the United States in their imported condition, being further processed by the importer into fish portions, fish sticks, and similar products. Under these circumstances, exporter's sales price, which is the applicable basis of comparison, does not exist and the Antidumping Act has no application.

This determination and the statement of reasons therefor are published pursuant to section 201(c) of the Antidumping Act, 1921, as amended (19 U.S.C. 160(c)).

[SEAL]

A. GILMORE FLUES,  
Acting Secretary of the Treasury.

## UNITED STATES CUSTOMS COURT

### WHALE-LIVER OIL IMPORTS CLASSIFIABLE AS ADVANCED DRUG:

Certain imports of whale-liver oil extracted from whale livers to obtain vitamin "A" oil, with the extraction made in the country of exportation, were held properly classifiable under paragraph 34, Tariff Act of 1930, as modified by the General Agreement on Tariffs and Trade (T. D. 51802) at the rate of 5 percent ad valorem as a drug, "advanced" in value or condition, as classified, rather than free of duty under paragraph 1669 of the said act, as modified by T. D. 51802, supra, as a "crude" drug. The decision held that the whale-liver oil was "advanced in value or condition," by certain processes beyond that essential to the proper packing of the drug and the prevention of decay or deterioration pending manufacture. The judgment was rendered on May 24, 1960, in the case *Alaska Fish Oil Extractors, Inc. v. United States (Whale Liver oil--Crude drug--Advanced drug)*, and published (C. D. 2179) in Treasury Decisions of June 2, 1960.

The Plaintiff contended that the oil in question is the "crudest" form of the drug imported into the United States and that any grinding or other process applied to the drug prior to importation was essential to the separation of the "drug" from the whole liver for the proper packing and the prevention of decay or deterioration of the drug pending manufacture.

On the other hand, the Government maintained that the imported oil represents an advancement over the liver "which is the crude drug" and that the processing of the whole "livers" to obtain the whale-liver "oil" in the case under consideration is essentially the same type of processing as took place in the case of fish livers previously under consideration by the Customs Court and the Appellate Court. See *Geo. S. Bush & Co., Inc., et al. v. United States*, 42 C.C.P.A. (Customs) 190, C.A.D. 592; *Eastman Kodak Company v. United States*, 41 C.C.P.A. (Customs) 114, C.A.D. 539; *Geo. S. Bus & Co., Inc. v. United States*, 32 C.C.P.A. (Customs) 56, C.A.D. 2851 *Wilbur-Ellis Company v. United States*, 27 Cust. Ct. 317, Abstract 55884; and *Ralston Purina Company v. United States*, 40 Cust. Ct. 407, Abstract 61435, in all of which cases the involved merchandise was held to be drugs, "advanced."



### U. S. Supreme Court

#### RULES ON CASE WHICH AFFECTS USE OF FISH TRAPS BY INDIAN COMMUNITIES IN ALASKA:

The United States Supreme Court handed down a decision on June 20, 1960, in *Metlakatla Indian Community vs. Egan* and the two cases related to it. By a 6 to 3 decision, the Court announced that it would refrain from deciding the issues presented to it on their merits in order to afford the Alaska Supreme Court the opportunity to rule on the questions open to it for decision.

In the meantime, the stay ordered by Justice Brennan on July 11, 1959, is continued in force until the final disposition of the three cases. This means that the

three Indian communities will continue to use the fish traps authorized by regulations issued by the Secretary of the Interior for the 1960 season at least.

The decision recognizes the questions of Federal law but indicates the Court would prefer to decide these questions after having an interpretation of the State law involved by the State Supreme Court.

The three dissenting Justices were of the view that the controlling questions in the cases were Federal in nature and were opposed to remitting the parties to the Alaska Supreme Court.



### White House

#### PRESIDENT APPOINTS UNITED STATES MEMBERS TO NEW SHRIMP CONSERVATION COMMISSION:

The White House announced on April 20, 1960, that the President had on that date appointed the following to be members of the United States section of the Commission for the Conservation of Shrimp in the Eastern Gulf of Mexico: John C. Ferguson, President, St. George Packing Co., Fort Myers, Fla.; Robert M. Ingle, Director of Research, Florida State Conservation Commission; and Donald L. McKernan, Director, Bureau of Commercial Fisheries, U. S. Department of the Interior.

The Commission was established pursuant to a Convention for the Conservation of Shrimp with Cuba signed on Aug. 15, 1958.

\* \* \* \* \*

#### UNITED STATES COMMISSIONER APPOINTED TO INTER-AMERICAN TROPICAL TUNA COMMISSION:

The White House on April 22, 1960, announced the appointment of Dr. J. Lawrence McHugh, Chief, Division of Biological Research, U. S. Bureau of Commercial Fisheries, as a United States Commissioner on the Inter-American



Dr. J. Lawrence McHugh

Tropical Tuna Commission, vice Arnie J. Suomela who resigned from this post because of the press of other duties.



## Eighty-Sixth Congress (Second Session)

Public bills and resolutions which may directly or indirectly affect fisheries and allied industries are reported. Introduction, referral to committees, pertinent legislative actions, hearings, and other actions by the House and Senate, as well as signature into law or other final disposition are covered.



The two Houses of Congress adjourned on July 3, 1960. The Senate will reconvene on August 8, 1960, and the House of Representatives will reconvene on August 15, 1960.

**APPROPRIATIONS CARRYOVER RESOLUTION:** H. J. Res. 778 (Cannon), introduced in the House on July 1, 1960, a joint resolution making temporary appropriations for the fiscal year 1961, and for other purposes; to the Committee on Appropriations; was passed by the House and signed by the Speaker, and sent to Senate for consideration. The resolution was passed by the Senate on July 1, and signed by the Acting President pro tempore. This joint resolution makes temporary appropriations for the months of July and August. Resolution covers a number of appropriation bills, among which are H. R. 12326, Public Works Appropriation Act, 1961--which includes funds for Fish and Wildlife studies regarding fishways, etc., and lower Columbia River fish sanctuary program; and H. R. 11666, Departments of State and Justice, the Judiciary, and Related Agencies Appropriation Act, 1961--which includes, in State Department Appropriations, funds for the international fisheries commissions, of which there are nine with the inclusion of the Tortugas Shrimp Commission. As these and other appropriation bills are signed by the President, the joint resolution will have no application, as it is intended only for carryover purposes.

**AREA ASSISTANCE ACT OF 1960:** H. R. 12812 (Moore), introduced in the House on June 24, 1960, a bill to assist areas to develop and maintain stable and diversified economies by a program of financial and technical assistance and otherwise, and for other purposes to the Committee on Banking and Currency. This legislation provides that the Federal Government shall, in cooperation with the States,

help areas of substantial and persistent unemployment to take effective steps in planning and financing their economic development; shall enable communities to achieve lasting improvement and decrease economic vulnerability by the establishment of a stable and diversified local economy; and that new employment opportunities should be created rather than merely transferred from one community to another.

This bill is similar to S. 722, a bill which was, passed by both houses of Congress, and vetoed by the President on May 13, 1960. Congress on May 24, 1960, failed to over-ride the Presidential veto.

**AREA REDEVELOPMENT ACT OF 1960:** H. R. 12854 (Flood), introduced in the House on June 28, 1960, a bill to promote the redevelopment of economically depressed areas by establishing a Government corporation which will provide a secondary market for industrial mortgages covering property in those areas; to the Committee on Banking and Currency.

**CHEMICAL PESTICIDES COORDINATION ACT:** S. Report No. 1601, Cooperation in the Use of Pesticides and Other Such Chemicals (June 18, 1960, 86th Congress, Second Session, Report of the Committee on Interstate and Foreign Commerce, to accompany S. 3473), 8 pp., printed. This bill, if enacted, is to be cited as the Chemical Pesticides Coordination Act. It is designed to avert the serious and unnecessary losses of fish and wildlife that have occurred as a result of the wide use of pesticides. Before programs involving the use of pesticides or other chemicals designed for mass biological controls are initiated or financed by agencies of the Federal Government, the initiating agency would be required to consult with the U. S. Fish and Wildlife Service and state wildlife agencies exercising administration over wildlife resources in states affected by the program. The legislation would provide that the U. S. Fish and Wildlife Service advise agencies consulting with it of damages which might result from any proposed program. In the event that agencies failed to take action recommended by the Fish and Wildlife Service, the Service must report the failure to the Congress for referral to the appropriate committees. The bill would authorize the Secretary of the Interior to exempt by regulation chemicals which would cause little or no damage by their use. The bill would provide that any Federal department or agency, in submitting requests to the Congress for appropriations for programs involving the use of chemicals for eradication or control of any animal or plant pest, shall include a full description of the proposed program, including the comments and recommendations of the U. S. Fish and Wildlife Service. Report discusses purpose and need for the legislation; presents Committee amendments and reports from the departments of Interior, Agriculture, and Health, Education and Welfare. Committee reported favorably on the bill with amendments.

The Senate on June 18, 1960, passed over S. 3473 (Magnuson), a bill introduced in the Senate on May 3, 1960, to provide for advance consultation with the Fish and Wildlife Service and with State wildlife agencies before the beginning of any Federal program involving the use of pesticides or other chemicals designed for mass biological controls.



The Senate on June 24, agreed to the removal from the calendar and referred to the Committee on Agriculture and Forestry for study, S. 3473.

**COLOR ADDITIVES IN FOODS:** Color Additives (Hearings before the Committee on Interstate and Foreign Commerce, House of Representatives, 86th Congress, Second Session, on H. R. 7624 and S. 2197, January 26, 27, 29, February 10, 11, March 11, April 5, 6, and May 9, 1960), 614 pp., printed. The purpose of these bills is to provide a scientifically sound basis for listing the colors that may be safely used in foods, drugs, and cosmetics; and to provide for other safeguards in the use of such colors, including, where necessary, appropriate tolerance limitations on the amount of color that may be used. The bills also would provide for a continuation of the present system of certifying the safety of individual batches of the so-called coal tar colors and would extend this system, where necessary, to natural colors not now covered by the certification system. They would, on the other hand, permit an exemption of any listed color from the certification requirement where certification is not necessary for the protection of the public health. Contains the text of both bills, reports on the bills from the Agriculture Department and the Bureau of the Budget, and statements from Federal officials, members of Congress, and businessmen.

On June 20, 1960, the House considered, under suspension of the rules, H. R. 7624 (Harris), a bill introduced in the House on June 9, 1959, to protect the public health by amending the Federal Food, Drug, and Cosmetic Act so as to authorize the use of suitable color additives in or on foods, drugs, and cosmetics, in accordance with regulations prescribing the conditions (including maximum tolerances) under which such additives may be safely used; debate to be limited to 2 hours.

On June 25, 1960, by a voice vote, the House adopted committee amendments and passed H. R. 7624. This passage was subsequently vacated and S. 2197 (Hill and Goldwater), a similar bill introduced in the Senate on June 17, 1959, was passed in lieu after being amended to contain the House-passed language. H. Res. 559, the rule under which the legislation was considered, had been adopted earlier by a voice vote.

Bill was cleared for the President's signature on June 30, when the Senate concurred with House amendment to S. 2197.

On July 1, 1960, a motion was made in the Senate to reconsider action of June 30, in which the Senate concurred with House amendment to adopt S. 2197 in lieu of H. R. 7624, and cleared bill for signature of President. The Senate tabled the motion to reconsider.

On July 12, 1960, the President signed S. 2197 into public law (P. L. 86-618). The legislation would expedite the testing of colors to determine safe levels of use by requiring color manufacturers to do the appropriate research and to submit the results to the Food and Drug Administration. All types of color additives would be subject to the safety requirements of the new law, not merely "coal-tar-colors" as under present regulations. Amends the Federal Food, Drug, and Cosmetic Act and authorizes Food and Drug Administration to list the color additives which may be used in foods.

#### COMMERCIAL SPONGE INDUSTRY RELIEF:

H. R. 12934 (Cramer), introduced in the House on July 1, 1960, a bill to prohibit the importation into the United States of commercial sponges measuring less than 5 inches in diameter; to the Committee on Ways and Means. This legislation is to prohibit the buying of foreign sponges under 5 inches in diameter, as they are competing unfairly with the American sponge industry. The American sponge industry is prohibited the taking of sponges less than 5 inches in diameter, while imports of sponges that size and smaller are permitted to enter the United States.

#### FISH AND WILDLIFE COOPERATIVE RESEARCH TRAINING UNITS:

On June 24, 1960, the House passed over without prejudice S. 1781, a bill to facilitate cooperation between the Federal Government, colleges and universities, the states, and private organizations for cooperative unit programs of research and education relating to fish and wildlife. Would authorize the U. S. Fish and Wildlife Service and other agencies of the Department of Interior to enter into cooperative agreements for conducting research, training, and demonstration programs. This bill passed the Senate on May 4, 1960.

**FISH HATCHERIES:** H. Rept. 1784, Orangeburg County, S. C., Fish Hatchery (June 9, 1960, 86th Congress, Second Session, report from the Committee on Merchant Marine and Fisheries, to accompany S. 2053), 3 pp., printed. The purpose of the bill is to provide for a needed increase in facilities for the production of warm water fish in South Carolina. This would be accomplished by accepting title by the Secretary of the Interior to an existing hatchery facility owned by Orangeburg County, S. C., and its development by the Fish and Wildlife Service. Background and need for this legislation is contained in the report. Development costs and property acquisition would require the expenditure of \$290,000, annual operating costs would be approximately \$30,000. Contains report of the Department of the Interior, with excerpts of an opinion of the Bureau of the Budget.

The House passed on the call of the Consent Calendar and cleared for the President on June 24, 1960, S. 2053, a bill to provide for the acceptance by the United States of a fish hatchery in the State of South Carolina. This bill was passed by the Senate on August 19, 1959.

S. 2053, was signed by the Speaker of the House, and sent to the President, on June 27, 1960.

On July 5, the President signed S. 2053 into public law (P. L. 86-572). Bill provides authority for the Secretary of the Interior to accept by donation on behalf of the United States, title to the Orangeburg County, S. C., fish hatchery, together with rights to take adequate water from Orangeburg County Lake therefor.

#### FISHING VESSEL MORTGAGE INSURANCE:

H. Rept. 1785, Relating to Vessel Mortgage Insurance Functions Transferred to the Secretary of the Interior (June 9, 1960, 86th Congress, Second Session, Report of the Committee on Merchant Marine and Fisheries, and committed to the Committee of the Whole House on the State of the Union, to accompany S. 2481), 6 pp., printed. The purpose of the bill is to make the program of mortgage insur-



ance on fishing vessels effective. Originally, authority to grant mortgage insurance on fishing vessels as well as merchant vessels reposed in the Secretary of Commerce. However, pursuant to the provisions of the Fish and Wildlife Act of 1956, jurisdiction over insurance on fishing vessels was transferred to the Secretary of the Interior. This jurisdiction over fishing vessel mortgage insurance did not authorize the Secretary of the Interior to draw on the Treasury to the extent that the premium fund proved inadequate, which would be likely in the early stages of the program. This bill would give the Secretary of the Interior the same authority as is possessed by the Secretary of Commerce to draw upon the Treasury to make payments on defaults of insured mortgages. Report gives background and need of legislation, and presents statements from several Federal officials. Committee recommended passage of the bill without amendment.

The House passed on the call of the Consent Calendar and cleared for the President on June 24, 1960, S. 2481, a bill to continue the application of the Merchant Marine Act of 1936, as amended, to certain functions relating to fishing vessels transferred to the Secretary of the Interior. Would create a Federal Fishing Vessel Mortgage Insurance Fund which shall be used by the Secretary of the Interior as a revolving fund for the purpose of carrying out the ship mortgage provisions as it applies to fishing vessels under the Fish and Wildlife Act of 1956. Further provides that if at any time funds are not sufficient to pay any amount the Secretary of the Interior is required to pay on ship mortgage insurance on fishing vessels, notes or other obligations may be issued to the Secretary of the Treasury as may be necessary. This bill was passed by the Senate September 11, 1959.

S. 2481, was signed by the Speaker of the House, and sent to the President, on June 27, 1960. The President signed the bill on July 5, 1960 (P. L. 86-577).

Public Law 86-577  
86th Congress, S. 2481  
July 5, 1960

#### AN ACT

74 STAT. 314.

To continue the application of the Merchant Marine Act of 1936, as amended, to certain functions relating to fishing vessels transferred to the Secretary of the Interior, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in order to fishing vessels, permit the efficient execution of functions relating to the issuance of mortgage insurance on fishing vessels, pursuant to the Merchant Marine Act of 1936, as amended (49 Stat. 1985; 46 U.S.C. 1952 edition, sec. 1271 and the following), which functions relating to fishing vessels have been transferred to the Secretary of the Interior pursuant to the Fish and Wildlife Act of 1956, the Sec. 70 Stat. 1119, the authority of the Secretary of Commerce under the said Merchant Marine Act of 1936, including, but not limited to, the authority contained in the amendment to such Act of July 15, 1958 (72 Stat. 358). 46 USC 1275. Approved July 5, 1960.

**FOREIGN COMMERCE STUDY (U. S. Trade and Common Market) (Hearings before the Committee on Interstate and Foreign Commerce, United States Senate, 86th Congress, Second Session, May 9 and 10, 1960), 298 pp., printed.** This report discusses the effect regional trade groupings will have on our exports, specifically in the Common Market area of Europe as well as the European free trade area. The report contains, among others, statements from officials of international business concerns, international trade organizations, nationwide industry committees, international chambers of com-

merce, etc. Also contains a variety of exhibits, among which are exhibits on United States exports and imports; hourly wage charts of various countries, and United States investments in foreign business. A section of the report is entitled "The European Common Market and the European Free Trade Association--Their Significance to United States Business," a lucid report submitted to the United States Senate Committee on Interstate and Foreign Commerce by the Chase Manhattan Bank. Covers all aspects of the two groups of countries that have signed treaties establishing certain bonds between them: the six-nation European Economic Community (comprising France, West Germany, Italy and the Benelux countries of Belgium, Luxembourg, and the Netherlands), and the seven-nation European Free Trade Association (comprising Austria, Switzerland, Portugal, Denmark, Norway, Sweden, and the United Kingdom). Also contains a list of companies with new operations in Western Europe during 1958-1959 (since the start of the European Common Market).

**HAWAII OMNIBUS ACT AMENDMENTS:** The Senate Committee on Interior and Insular Affairs on June 24 reported out (S. Rept. No. 1681), with amendments H. R. 11602 (Inouye), a bill to amend certain laws of the United States in light of the admission of the State of Hawaii into the Union.

S. Rept. No. 1681, Hawaii Omnibus Bill (June 24, 1960, Report of the Committee on Interior and Insular Affairs, to accompany H. R. 11602), 53 pp., printed. This legislation is a necessary measure to make complete and perfect the admission of Hawaii into the Union on a free and equal footing with the other 48 States. It amends a number of acts of Congress, some merely technically, such as changing the phraseology in a statute from "Territory of Hawaii" to "State of Hawaii." Other Federal laws are amended substantively, primarily to equalize Federal activities in the new State, especially with respect to grant-in-aid programs. Section 11 contains perfecting amendments to the statute, codified at 16 U. S. C. 758-758d, which authorizes the Secretary of the Interior to undertake exploration, investigation, development, and maintenance projects for fishery resources in the Pacific. Inappropriate references to the "Territory" of Hawaii and to the "Hawaiian Islands" would be deleted or modified by the amendments. Section 12 provides a perfecting amendment to section 2(d) of the Fish Restoration Act (16 U.S.C. 777a(d)), to remove the definition of the term "State." The term is defined by existing law to include the States and the territory of Hawaii. The report discusses the purpose and background of the bill, committee amendments, cost, and maintenance of existing arrangements. Also presents a section-by-section analysis and changes in existing law. The Committee reported favorably on the bill with amendments.

H. R. 11602 with amendment was sent back to the House on June 28, 1960.

On June 30, 1960, the House adopted H. Con. Res. 706, authorizing the making of certain corrections in the enrolling of H. R. 11602.

On July 2, 1960, the Vice-President announced that he had signed H. R. 11602 and on July 5, H. R. 11602 was presented to the President for signature.

On July 12, 1960, the President signed H. R. 11602 into public law (P. L. 86-624). The purpose of this legislation is to "gather up the loose ends" in Federal legislation involved in the transition of Hawaii from a territory to a state of the United States; will make technical changes in our national laws to make Hawaii a full and equal partner with the other 49 states. One section contains perfecting amendments to the statute, which authorizes the Secretary of the Interior to undertake exploration, investigation, development, and maintenance projects for fishery resources in the Pacific. Inappropriate references to the "Territory" of Hawaii and to the "Hawaiian Islands" would be deleted or modified by the amendments.

**IMPORTED COMMODITY LABELING:** H. R. 5054 (Herlong), was reported out of the Senate Committee on Finance on June 27, 1960 (S. Rept. No. 1747), a bill to amend the Tariff Act of 1930 with respect to the marking of imported articles and containers. This bill passed the House on February 3, 1960.

S. Rept. 1747, Marking of New Packages for Imported Articles (June 27, 1960, 86th Congress, Second Session, Report of the Committee on Finance, to accompany H. R. 5054), 5 pp., printed. The purpose of this legislation is to amend section 304 of the Tariff Act of 1930, as amended, to provide that when articles, imported in containers required to be marked, are repackaged in the United States and offered for sale, the new package shall be marked with the name of the country of origin. Imported items which are processed in this country sufficiently to become an American manufacture are not included within the purview of the legislation and would not be affected. The committee reported the bill favorably with amendment and recommended that it pass. The report contains changes in existing law.

On July 2, 1960, the Senate passed with an amendment, in which the concurrence of the House was requested, H. R. 5054. The principle of the legislation is that items which are simply repackaged in the U. S. from bulk containers to consumer containers should continue to indicate the origin of the imported articles. Imported items which are processed in this country sufficiently to become an American manufacture (such as fish sticks from fish blocks and breaded shrimp from raw shrimp), are not included within the purview of the legislation and would not be affected. The Senate amendment, which had been recommended by the Finance Committee, provides that, "This subsection shall not apply in cases where the Secretary of the Treasury finds that compliance with the marking requirements of this subsection would necessitate such substantial changes in customary trade practices as to cause undue hardship and that repackaging of the article in question is otherwise than for the purpose of concealing the origin of such article."

**INCOME TAX LAW REVISION IN FAVOR OF FISHERMEN:** H. R. 1925 (King of Calif.), introduced in the House on January 9, 1959, a bill to extend to fishermen the same treatment afforded farmers in relation to estimated income tax; was reported out of the Committee on Ways and Means on June 28, 1960 (H. Rept. No. 2016).

**INCOME TAX LAW REVISION IN FAVOR OF FISHERMEN:** H. Rept. No. 2016, Declaration of Estimated Income Tax by Fishermen (June 28, 1960, 86th Congress, Second Session, Report from the Committee on Ways and Means, to accompany H. R. 1925), 5 pp., printed. This legislation provides that, for purposes of the estimated income tax, fishermen are to be accorded the same treatment as presently is available for farmers. Under the amendment this is to be provided for taxable years beginning after December 31, 1960. The principal advantage for income from farming which the bill extends to income from fishing is the privilege of filing the declaration of estimated tax, and paying the estimated tax, by January 15 after the end of the year in question (in the case of a calendar-year taxpayer), rather than filing the declaration by the prior April 15 and making quarterly payments of estimated tax largely during the year. This bill has been reported unanimously by the committee. The report includes a general statement regarding payment of the estimated tax, and the changes in existing law.

On June 29, 1960, H. R. 1925, was read three times, passed by the House, and sent to the Senate.

**INTERNATIONAL FISHERIES ORGANIZATIONS:** United States Contributions to International Organizations, House Document No. 418, 86th Congress, 2nd Session (Letter from the Acting Secretary of State, dated June 17, 1960, transmitting the eighth report on the extent and disposition of U. S. contributions to international organizations for the fiscal year 1959, pursuant to section 2 of public law 806, 81st Congress), 133 pp., printed. Each year the Secretary of State reports on the extent and disposition of financial contributions by the United States to International Organizations of which it is a member. This is the eighth such report to Congress, and covers United States contributions for the fiscal year 1959. Only the multi-lateral organizations and programs to which the United States contributes are included. Bilateral commissions have been excluded. This document gives a brief outline of the history of each such commission: secretary or director; term of office, origin and development; initial date of United States participation; current authority for United States participation; purpose of organization; United States contribution; and the governing body. Among the fishery commissions mentioned are the Inter-American Tropical Tuna Commission; International Commission for the Northwest Atlantic Fisheries; International Whaling Commission; and the North Pacific Fur Seal Commission.

**LAW OF THE SEA CONVENTIONS:** On July 2 Senator Long of Louisiana sent to the Senate desk a reservation to the ratification of the Optional Protocol of Signature Concerning the Compulsory Settlement of Disputes, which originated at the Law of the Sea Conference held at Geneva in 1958. The Senate on May 26 approved resolutions of ratification of the four conventions which also were the result of the Geneva Conference, and at the same time rejected ratification of the Optional Protocol on the grounds that it failed to include the so-called Connally reservation. The motion to reconsider the unfavorable vote entered by Senator Mansfield of Montana on May 27 is still pending before the Senate. The reservation ordered by Senator Long

is similar to the Connally reservation in that it reserves to the United States the authority to decide what matters are essentially within the domestic jurisdiction of the United States and thus not to be referred to the International Court of Justice.

#### MARINE SCIENCES SPECIAL COMMITTEE:

H. R. 12700 (Brooks of Louisiana), introduced in the House on June 17, 1960, a bill to amend the National Science Foundation Act of 1950 to create a Special Committee on Marine Sciences, to develop and encourage a national program for the promotion of research, surveys, and education in the marine sciences, to recommend contracts, grants, or other forms of assistance, to encourage the cooperation of agencies and evaluate the programs of marine research undertaken by agencies of the Federal Government in these scientific fields; referred to the Committee on Science and Astronautics. The bill would appropriate \$37.2 million for marine research operations by the Foundation for 10 years.

#### OCEANOGRAPHIC RESEARCH PROGRAM: H. Rept. No. 2078, Ocean Sciences and National Security (Report of the Committee on Science and Astronautics, U. S. House of Representatives, 86th Congress, Second Session, Serial h), 180 pp., printed. Contains tables, summaries of studies various government agencies are making on oceanography, and a list of congressional bills which relate to oceanography, their preambles, and in some instances, pertinent sections of the bills are included. The Bureau of Commercial Fisheries, U. S. Fish and Wildlife Service, is responsible for extensive programs in support of all types of fishery interests, including particularly biological aspects of oceanography, and these are also discussed in the report. The Bureau maintains a number of laboratories for the purpose of studying those characteristics of the ocean which affect fish and fishing, and the report summarizes their work in the following fields: (1) Plankton sampling; (2) Behavior of marine animals; (3) Artificial cultivation of young fish and shellfish; (4) Distribution of marine populations; (5) Biological surveys and inventories of the ocean; (6) Taxonomy of marine species; (7) Genetics of marine organisms; (8) Pond fish culture, brackish water farming; (9) Effects of industrial and domestic waste on estuaries; (10) Study of disease and parasites and their effects in marine ecology; (11) Transplantation of organisms; (12) The potential of artificially increasing nutrients; (13) The utilization of new marine products; (14) The improvement of fishing techniques and equipment; and (15) The economy and legal aspects of commercial fisheries. The report further inventories the existing capabilities in oceanographic research, in terms of universities and other laboratories undertaking oceanic research, manpower, the size and sources of funds especially from Federal agencies, including the manner in which Federal programs from some 19 different agencies are integrated; and, finally, the manner in which the United States participates in international programs. The three different 10-year plans are abstracted, compared, and analyzed. The Committee adopted and approved the report on June 30, 1960.

Oceanography (Hearings before the special Subcommittee on Oceanography of the Committee on

Merchant Marine and Fisheries, House of Representatives, 86th Congress, Second Session on H. R. 9361, H. R. 10412, and H. R. 12018, May 17, 18, 19, 20, 24, and 25, 1960), 217 pp., printed. This legislation is designed to foster a program for the establishment of an effective, coordinated national oceanographic program. Contains the text of the three oceanographic bills, and statements and testimony of various oceanographers, geologists, zoologists, marine biologists, government officials, and members of various fisheries commissions.

S. Rept. No. 1525, Marine Sciences and Research Act (June 7, 1960, 86th Congress, Second Session, Report of the Committee on Interstate and Foreign Commerce, to accompany S. 2692), 64 pp., printed. The primary purpose of the bill is to enhance the national economy, security, and welfare by increasing our knowledge of the oceans and the Great Lakes in all pertinent scientific fields, such as physics, biology, chemistry, meteorology, and geology. To speed this objective, the bill is designed to approximately double, within the next 10 years, the capabilities of the United States to conduct a balanced, comprehensive program of marine research and surveys. This program would consist of (1) a national policy of continuous and constructive scientific studies of the waters of our national boundaries; (2) educate and train additional marine scientists in adequate numbers; (3) construct and operate new and advanced research ships, laboratories, equipment, etc.; (4) coordinate oceanographic and limnological activities of the various Federal departments and agencies participating in the program; and (5) international and interdepartmental exchange of oceanographic data. Report discusses need, explains, and presents a section-by-section analysis of the bill. Also includes the reports submitted by the Budget Bureau, Comptroller General, and the departments of Commerce, Navy, Interior, Treasury, and Health, Education and Welfare; as well as the National Science Foundation. Committee reported favorably on the bill with amendments.

OCEANOGRAPHIC RESEARCH PROGRAM: The Senate on June 18 passed over as not appropriate for calendar action, S. 2692 (Magnuson), a bill to advance the marine sciences, to establish a comprehensive 10-year program of oceanographic research and surveys; to promote commerce and navigation, to secure the national defense; to expand ocean resources; to authorize the construction of research and survey ships and facilities; to assure systematic studies of effects of radioactive materials in marine environments; to enhance the general welfare, and for other purposes.

Senate on June 23, 1960, passed S. 2692 (Magnuson), a bill to advance the marine sciences, to establish a comprehensive 10-year program of oceanographic research and surveys, to promote commerce and navigation, to secure the national defense, to expand ocean, coastal, and Great Lakes resources, to authorize the construction of research and survey ships and facilities, to assure systematic studies of effects of radioactive materials in marine environments, to enhance the general welfare, and for other purposes. As passed, the bill authorizes work to be done by the National Science Foundation, the Bureau of Commercial Fisheries and the Bureau of Mines of the Department of the Interior, the Department of Commerce,

Atomic Energy Commission, Department of the Navy, Department of the Army, Smithsonian Institute, and the Department of Health, Education, and Welfare. Motion to reconsider passage was tabled.

Bill authorizes \$534,382,485 over 10 years, of which \$170,840,000 would be for a new Division of Marine Sciences to be established by the National Science Foundation to coordinate the program, \$60,555,000 for Atomic Energy Commission to control and monitor radioactive waste disposal and for various radioactivity in the oceans; \$131,000,000 for Interior Department to study water resources, particularly fish, in the oceans and Great Lakes. Also an open-end authorization for the Navy to build 24 research and survey ships (300-3,000 tons); the new National Science Foundation \$9,950,000 to build similar ships.

#### POWER PROJECT FISHERIES RESOURCES

**PROTECTION:** S. 2586, a bill to provide for the conservation of anadromous fish spawning areas in the Salmon River, Idaho, was ordered favorably reported by the Senate Committee on Interstate and Foreign Commerce on June 29, 1960. This legislation would prohibit authorization for dams on the Salmon River in Idaho which would exceed in height those dams presently existing on downstream sections of the Snake and Columbia Rivers. Also would prevent licensing of any project by the Federal Power Commission which would tend to have a more restrictive effect on the passage of anadromous fish than similar projects already in existence throughout the Columbia River Basin. Would require the Secretary of the Interior to report to the Congress on any conservation developments including those relating to fish passage around dams that in his opinion would justify amending the provisions of the proposed bill. The bill would open the Salmon River to possible power projects and development.

#### PUBLIC WORKS APPROPRIATIONS, 1961:

Part I--Civil Functions, Department of the Army (Hearings before the subcommittee of the Committee on Appropriations, House of Representatives, 86th Congress, Second Session, to accompany H. R. 12326), February 1960, pp. 1-1431, 1473 pp., printed. Contains, among others, statement of the Director, Bureau of Commercial Fisheries, and the Chief, Branch of Columbia River Fisheries, Bureau of Commercial Fisheries, U. S. Fish and Wildlife Service. The appropriation for the Corps of Engineers, Department of the Army, contains funds for the Columbia River Fishery Development Program, and studies to determine the effects of fish and wildlife resources of water-control projects of the Corps of Engineers. The statement of the Director generally points out the importance of the Columbia River fishery development program--a total of 20 hatcheries have been modernized or newly constructed; 400 fish screens have been installed in irrigation diversions, 15 major fishways have been constructed, and stream improvements have made 1,200 miles of stream more accessible to salmon and steelhead. During 1959, some 15 million young salmon and steelhead were produced at program hatcheries. The 1961 budget totals \$1,400,000 for construction and \$1,915,000 for operation and maintenance. The construction budget provides for the following items required to carry forward the program necessary to obtain increased production from areas still accessible

to anadromous fish in order to mitigate fisheries losses resulting from the Federal dam construction program: (1) repairs and additions to several hatcheries; (2) operational studies; (3) screening of diversions; (4) stream improvement; and (5) project appraisal. The printed hearings also contain references to preservation of fish and funds available for that purpose; and fish losses from construction of dams on the Columbia River.

Part I (of two parts)--Civil Functions, Department of the Army (Hearings before the subcommittee of the Committee on Appropriations, United States Senate, 86th Congress, Second Session, on H. R. 12326), February-April 1960, pp. 1-1431, 1473 pp., printed. Contains, among others, statements of the Chief of Division of Resource Management, and Chief of Branch of Columbia River Fisheries, Bureau of Commercial Fisheries, U. S. Department of the Interior. Development of the hydroelectric potential of the Columbia River, as well as flood control and irrigation and navigation needs, has resulted in a program of construction of major dams, which is a civil function of the Corps of Engineers, Department of the Army. These structures have blocked and impeded the access of salmon and steelhead to their spawning areas. Additional dams under construction will further reduce productivity and endanger the commercial and sport fisheries for these species, valued at approximately \$20 million annually. To counteract the expected damage to this resource the Bureau of Commercial Fisheries, in cooperation with the States of Idaho, Oregon, and Washington, prepared a program for the maximum production of salmon and steelhead in streams tributary to the Columbia River. To date this program has included the clearance of obstructions from streams to permit passage of fish, the construction of fishways over waterfalls, the construction and emplacement of screening devices at hydroelectric and irrigation diversions, and the construction of hatcheries and other facilities for the protection and development of salmon and steelhead.

For fiscal year 1961 stream clearing, fishway construction, and screening of water diversions are being continued under the program with special emphasis given to the Williamette System and the area above McNary Dam. The associated activities of project appraisal, operational studies, engineering and inspection, coordination, and general administration will continue. To carry on these activities, the amount of \$1,400,000 is required for fiscal year 1961. This part of the hearings has references to fish and wildlife studies by the U. S. Fish and Wildlife Service; fish facilities; and fish ladders.

Part II (of two parts)--Civil Functions, Department of the Army (Hearings before the subcommittee of the Committee on Appropriations, United States Senate, 86th Congress, Second Session, on H. R. 12326), April-June 1960, pp. 1433-2866, 1475 pp., printed. This year's budget includes for the Columbia River fishery development program, \$1,400,000 for construction and \$1,915,000 for operation and maintenance. This program is designed to counteract damages to fisheries resulting from dam construction and other obstructions in the lower Columbia River. The program has been developed by the Fish and Wildlife Service with funds appropriated to the Corps of Engi-



neers. The Fish and Wildlife Service has coordinated its activities with the fisheries departments of Oregon and Washington. There is an urgent need for an intensified study of the program of fish passage around high dams. This type of study is strongly endorsed by the Columbia Basin Inter-agency Committee. Time is of the essence because normal resource development of our great Pacific Northwest rivers cannot be realized fully until the fish passage problem is solved. The budget also includes an item of \$500,000 for fish and wildlife studies to determine the effects of fish and wildlife resources of water-control projects of the Corps of Engineers. This part of the printed hearings has references to fish and wildlife studies by the U. S. Fish and Wildlife Service; fish facilities; and fish ladders.

H. R. 12326, making appropriations for civil functions administered by the Department of the Interior, certain agencies of the Department of the Interior, the Atomic Energy Commission, the Tennessee Valley Authority and certain study commissions, for the fiscal year ending June 30, 1961; was marked up and ordered favorably reported (S. Rept. 1768) with amendments by the Senate Committee on Appropriations in executive session on June 29, 1960. Includes funds to permit detailed studies by the Fish and Wildlife Service of 191 Corps of Engineers and Bureau of Reclamation projects in the United States, exclusive of the Missouri River Basin. These studies are provided for in the Fish and Wildlife Coordination Act which require that the Fish and Wildlife Service determine the probable effects on fish and wildlife resources of water control projects proposed under the jurisdiction or control of the Federal Government and to insure that fish and wildlife conservation shall receive equal consideration and be coordinated with other features of water-resource development programs. Measures are recommended to protect and, where possible, to develop and improve fish and wildlife.

S. Rept. No. 1768, Public Works Appropriation Bill, 1961 (June 29, 1960, 86th Congress, Second Session, Report of the Committee on Appropriations, to accompany H. R. 12326), 47 pp., printed. In the appropriations for the Civil Functions, Department of the Army, Corps of Engineers, are included: (1) under general investigations for certain river basins and bays \$50,000 for fish and wildlife studies; for Lower Columbia River Fisheries Development \$1,400,000--\$351,000 of which is programmed for Idaho (in view of the importance of Idaho streams to the fishery resources of the Pacific Northwest, the committee desires that these funds be utilized in Idaho, and not diverted to other phases of the program); for the Lower Columbia River fish sanctuary program for operation and maintenance by the U. S. Fish and Wildlife Service is included \$1,915,000.

**SCIENCE AND TECHNOLOGY COMMISSION:** H. R. 12952 (Brooks of La.), introduced on July 5, 1960, a bill for the investigation of the establishment of a Commission on a Department of Science and Technology; to the Committee on Government Operations.

**SHRIMP CONSERVATION WITH CUBA:** On June 30, 1960, the House Subcommittee on Fisheries and Wildlife Conservation of the Committee on

Merchant Marine and Fisheries held a hearing on H. R. 9917, a bill giving effect to the convention between the United States and Cuba for the conservation of shrimp, signed at Havana, August 15, 1958. Officials of the Fish and Wildlife Service of the Department of the Interior were heard.

**SHRIMP IMPORT DUTIES--LOUISIANA MEMORIAL:** A memorial of the Louisiana State Legislature was presented to the House and Senate on June 20. The Memorial urges the President and the Congress of the United States to legislatively institute some type of program to curtail and control the foreign importation of shrimp; referred to the House Committee on Ways and Means, and the Senate Committee on Finance. Copies of the resolution were sent to the President of the United States, members of the Louisiana delegation in the U. S. Congress, and to Presiding Officers of the House of Representatives and the Senate of the Congress of the United States.

**STATE DEPARTMENT APPROPRIATIONS:** On June 21, 1960, the Subcommittee of the Senate Committee on Appropriations began hearings on H. R. 11666, a bill introduced in the House on April 8, 1960, making appropriations for the Departments of State and Justice, the Judiciary, and related agencies for the fiscal year ending June 30, 1961.

H. R. 11666, was marked up, and ordered favorably reported (S. Rept. 1777), with amendments by the Senate Committee on Appropriations in executive session on June 29, 1960. State Department appropriations provide funds for the international fisheries commissions, to enable the United States to meet its obligations in connection with participation in nine such commissions (including the new Tortugas Shrimp Commission), pursuant to treaties or conventions, and implementing Acts of Congress. This bill passed the House on April 13, 1960.

S. Rept. No. 1777, Departments of State and Justice, the Judiciary, and Related Agencies Appropriation Bill, 1961 (June 29, 1960, Report of the Committee on Appropriations, to accompany H. R. 11666), 17 pp., printed. State Department appropriations include funds for international fisheries commissions. The 1961 budget estimate for this purpose was \$1,925,000, the amount recommended in both Senate and House committees is \$1,875,000--\$150,000 more than for 1960 but \$50,000 less than the budget estimate for 1961. Committee reported the bill to the Senate with various amendments.

The Senate by voice vote on June 30 passed H. R. 11666. All Committee amendments were adopted en bloc. The Senate insisted on its amendments, asked for conference with House, and appointed conferees.

**STERN RAMP TRAWLERS:** S. J. Res. 216 (Magnuson) introduced in the Senate on June 30, 1960, a joint resolution to authorize the Secretary of Commerce to construct a modern stern ramp trawler to be used for research purposes and authorizing the appropriation of funds. This legislation would provide for the Secretary of Commerce to be authorized to consult with the Secretary of the Navy and Secretary of the Interior to



determine the appropriate size, design, and equipment for a large, modern, stern ramp trawler with scientific facilities suitable for use in general oceanographic studies and as a research vessel to develop basic fisheries sciences and advanced techniques for production, preparation, and preservation of fisheries products from areas distant from ports and subject to severe weather and navigational difficulties. Referred to the Committee on Interstate and Foreign Commerce.

**SUPPLEMENTAL APPROPRIATIONS:** H. Rept. No. 1293, Supplemental Appropriation Bill, 1961 (June 20, 1960, 86th Congress, Second Session, Report of the Committee on Appropriations, to accompany H. R. 12740), 14 pp., printed. An explanation of the individual items in the bill for various departments and agencies and a detailed tabulation of the budget estimates and recommended appropriations appear in this report. For the Fish and Wildlife Service, the Committee has disallowed the supplemental request for authority to purchase special heavy-duty equipment for 20 passenger motor vehicles. Also disallowed \$4,158,000 requested by the President for a stepped-up Government program for export trade.

H. R. 12740, was reported out on July 1, by the Senate Committee on Appropriations, with amendments (S. Rept. No. 1832).

The bill was passed by the Senate on June 30. The Senate insisted upon its amendment, requested a conference with the House, and appointed conferees.

House consideration of the Senate version of H. R. 12740 began July 2. House adopted a resolution (H. Res. 596), which in turn would permit the House to consider the Senate amendments to the bill. The House restored to the bill some items which the Senate had deleted. The House also refused to accept the Senate amendments. The Senate insisted on retaining in the final version of the bill certain amendments. If the House would accept those amendments, the Senate in turn would agree to the House position on other amendments. By voice vote, the House agreed to the compromise and sent H. R. 12740 back to the Senate, which acted immediately. The Senate accepted the compromise measure and sent the bill to the White House.

On July 14, 1960, the President signed H. R. 12740 into public law (P. L. 86-651).

**TARIFF NEGOTIATIONS:** H. Con. Res. 707 (Levering), a concurrent resolution introduced in the House on July 1, 1960, expressing the sense of Congress that the United States should not grant further tariff reductions in the forthcoming tariff negotiations under the provisions of the Trade Agreements Extension Act of 1958, and for other purposes; to the Committee on Ways and Means. Identical to about 37 other concurrent resolutions introduced in both House and Senate since January 25, 1960.

**WAGES--MINIMUM HOURLY RATE INCREASE:** Minimum Wage Hour Legislation (Hearings before the subcommittee on Labor Standards of the Committee on Education and Labor, House of Representatives, 86th Congress, Second Session, on various bills regarding Minimum Wage Legislation,

May 10, 11, 17, 18, and 19, 1960--Part 3), 1663 pp., printed. Of the 20 million workers not covered by wage-hour law, 61,000 employees that are engaged in fishing or the canning and processing of fish products are specifically exempt, even though they are engaged in commerce, or in the production of goods for commerce. Contains statements of businessmen, representatives of associations, and members of Congress.

H. R. 12677 (Roosevelt), introduced in the House on June 15, 1960, a bill to amend the Fair Labor Standards Act of 1938, as amended, to provide coverage for employees of large enterprises engaged in retail trade or service and of other employers engaged in activities affecting commerce, to increase the minimum wage under the Act to \$1.25 an hour, and for other purposes.

H. Rept. 1933, Fair Labor Standards Amendments of 1960 (June 22, 1960, Report from the Committee on Education and Labor, to accompany H. R. 12677), 63 pp., printed. The committee-reported bill would extend wage-hour coverage under the Fair Labor Standards Act of 1938, as amended, to approximately 3,509,000 additional employees, and increase the prescribed minimum rate per hour for the employees now subject to the act from the present \$1 to \$1.25, based upon a graduated scale over a period of several years. The minimum rate per hour for employees newly brought within coverage of the act would start at \$1 and be gradually increased from year to year also to \$1.25. Among the industries, and the employees therein, which would be affected by the extension of wage-hour coverage and brought under the act are the employees engaged in seafood activities. Under the bill, section 13(a)(5) of the act is amended to exempt any employed in, or necessary to the conduct of, the catching, taking, harvesting, cultivating, or farming of any kind of fish, shellfish, and other stated aquatic forms of life. It is the committee's intent that this additional language also provide an exemption for employees necessary to the conduct of the loading, unloading, or packing of such seafood products for shipment or necessary to the conduct of propagating, processing, marketing, freezing, curing, storing, or distributing the above products or byproducts. The effect therefore, in the committee's view, would be to reaffirm congressional intent in the original seafood exemption including those employees whose services are necessary to the conduct of the stated operations as set forth in the act.

The minimum wage and maximum hour schedules contained in the committee bill both minimize and cushion the alleged impact of applying minimum wage and maximum hours standards to wage earners who would be covered by the Fair Labor Standards Act for the first time under the committee bill. When the bill would first come into effect, the minimum wage would be \$1 an hour and the maximum workweek would be 48 hours; during the second year the minimum wage rate would be \$1.10 an hour, the maximum workweek 46 hours; during the third year the minimum wage rate would be \$1.20 an hour, the maximum workweek 44 hours. The minimum wage rate of \$1.25 an hour would be achieved at the beginning of the fourth year after the effective date of the bill, but the maximum workweek of 42 hours, which would at that time apply to newly covered workers would still be some-

what longer than the maximum workweek of 40 hours applicable to presently-covered workers. The 40-hour maximum workweek would not be achieved for newly-covered workers until the beginning of the fifth year after the effective date of the bill.

The report discusses the purpose, background, areas covered, and problems. Also contains a section-by-section analysis, changes in existing laws, and minority views, as well as additional views by Congressmen Dent and James Roosevelt. Committee reported the bill to the House without amendment.

H. R. 12853 (Kitchin), introduced in the House on June 28, 1960, a bill similar to S. 3758 except that it increases the minimum wage under the act only to \$1.15 an hour instead of \$1.25. The Committee on Rules granted an open rule, with 2 hours debate, waiving points of order, making H. R. 12853 in order as a substitute for H. R. 12677 (Roosevelt).

H. R. 12847 (Kearns), introduced in the House on June 28, 1960, a bill similar to H. R. 12853.

On June 30, by a record voice vote, the House passed H. R. 12677, a bill to amend the Fair Labor Standards Act of 1938, as amended, to provide coverage for employees of interstate retail enterprises and to increase the minimum wage under the act to \$1.15 an hour. By a record vote the House adopted the Kitchin amendment to replace the text of H. R. 12677 with the language of H. R. 12853. Prior to its adoption the Kitchin amendment was amended to exempt certain agricultural commodity processing workers. H. Reg. 581, the rule for the consideration of the legislation, had been adopted earlier. The bill as passed by the House would raise the \$1-an-hour-minimum to \$1.15 for the workers now covered by the law effective January 1, 1961. It would also bring another 1.4 million retail workers under the law's protection but their minimum would be \$1 an hour and they would not receive overtime payments. Only employers with five or more retail stores in two or more states would come under the bill. Section 13 of the Fair Labor Standards Act of 1938 is amended so that the exemption for the fishing industry in (a)(5) reads: "any employee employed in or necessary to the conduct of catching, taking, harvesting, cultivating, or farming of any kind of fish, shellfish, crustacea, sponges, seaweeds, or other aquatic forms of animal and vegetable life, including the going to and returning from work and including employment in or necessary to the conduct of the loading, unloading, or packing of such products for shipment or in propagating, processing (other than canning), marketing, freezing, curing, storing, or distributing the above products or byproducts thereof;" and the exemption for the fish canning industry in (b)(4) reads: "any employee employed in the canning of any kind of fish, shellfish, or other aquatic forms of animal or vegetable life, or any byproduct thereof." But the fish canning exemption is still limited to those employees "employed in the canning of any kind of fish." Present overtime exemption for fish canners and processors is not changed by the bill as passed by the House. The bill is cited as the "Fair Labor Standards Amendments of 1960."

S. 3758 (Morse for Kennedy), introduced in the Senate on June 27, 1960, an original Committee

bill to amend the Fair Labor Standards Act of 1938, as amended, to provide coverage for employees of large enterprises engaged in retail trade or service and of other employers engaged in activities affecting commerce, to increase the minimum wage under the act to \$1.25 an hour, and for other purposes; and placed on the calendar. This bill was reported out by the Senate Committee on Labor and Public Welfare on June 27 (S. Rept. No. 1744). As reported out by the Committee, no change would be made in the year-time overtime exemption now available to fish canners and processors and treats both the canning and processing industry on the same basis.

An amendment covering the fishery exemption was proposed on June 29, in the Senate by Goldwater to S. 3758. The amendment states: On page 21, line 13, strike the period and insert the following: "; or (16) any employee employed in the catching, taking, harvesting, cultivating, or farming of any kind of fish, shellfish, crustacea, sponges, seaweeds, or other aquatic forms of animal and vegetable life, including the going to and returning from work and including employment in the loading, unloading, or packing of such products for shipment or in propagating, processing (other than canning), marketing, freezing, curing, storing, or distributing the above products or byproducts thereof." This in essence, would broaden the present fishery exemption in the act for fish processors. This amendment was ordered to lie on the table and printed.

S. Rept. 1744, Fair Labor Standards Amendments of 1960 (June 27, 1960, Report from the Committee on Labor and Public Welfare, together with Minority Views, to accompany S. 3758), 96 pp., printed. The bill seeks to increase the minimum wage of those employees presently covered by the act and by extending the benefits of the law to additional workers employed in large retail and service enterprises and other employers engaged in activities affecting commerce. The committee bill makes the following principal changes in the Fair Labor Standards Act of 1938, as amended: (1) Minimum wage for employees now covered by the act is increased by 15 cents an hour during calendar year 1961 and by an additional 5 cents an hour in each of the following 2 years, so as to raise the present minimum wage under the Fair Labor Standards Act from \$1 to \$1.25 an hour over a 3-year period. (2) Coverage is extended to additional groups of employees for whom minimum wages and overtime under the act are set on the following schedule: 1st year after effective date \$1 an hour, no overtime requirement; 2nd year after effective date \$1.05 an hour, overtime after 44 hours a week; 3rd year after effective date \$1.15 an hour, overtime after 42 hours a week; and thereafter \$1.25 an hour with overtime after 40 hours a week. Among others, employees of the seafood processing industry, exempt from the present law, are brought under the minimum wage provisions of the act in accordance with the above schedule, but not under the overtime requirements. This will equalize the treatment of these employees with those engaged in seafood canning who are already covered by the act's minimum wage provisions. The bill does not change the exemption for employees engaged in fishing operations, or in the first processing and canning performed by such fishing employees as an incident to or in conjunc-

tion with their fishing operations. Nor does the bill change the status under the present law of employees who are engaged in the canning of seafood.

The only change the bill makes in these exemptions is with respect to the processing of seafood. Employees engaged in such activities are brought under the minimum wage provisions on the same scale as newly-covered employees in retail and service enterprises. They will continue to be exempt from the overtime requirements.

The change made by the bill will have the effect of placing fish processing and fish canning on the same basis under the act. It is estimated that approximately 32,000 employees will be brought under the minimum wage provisions of the act as a result of the changes made by the bill.

The present exemptions in sections 13(a)(5) and 13(b)(4) have been judicially interpreted to apply to all employees employed in the seafood industry including any employee who participates in activities which are necessary to the conduct of the operations specifically described in the exemptions (*McComb v. Consolidated Fisheries Company*, 174 F. 2d 74, C. A. 3, 1949). These interpretations are consistent with the congressional purpose of treating all employees of one establishment in the same manner under the act and of avoiding segmentation as between different employees of the same employer engaged in the named operations.

For the same reasons, there was included in section 13(a)(5) as amended by the bill an exemption for the "first processing, canning, or packing" of marine products "at sea as an incident to or in conjunction with such fishing operations." The purpose of this additional provision is to make certain that the act will be uniformly applicable to all employees on the fishing vessel including those employees on the vessel who may be engaged in these activities at sea as an incident to the fishing operations conducted by the vessel.

The report also contains 24 pages of "Minority Views," in which members of the committee in the minority group point out their objections to many of the specific amendments contained in the committee bill.

The report also discusses the principal provisions and new coverage; presents a section-by-section analysis, changes in existing law, and relationship to other laws. The bill was reported to the Senate with amendments.

**WILDLIFE, FISH, AND GAME CONSERVATION IN MILITARY RESERVATIONS:** The Senate on June 23, 1960, passed with amendments H. R. 2565, to promote fish and game conservation and rehabilitation in military reservations. This bill was passed by the House March 21, 1960.



#### THAWING METHOD BEFORE COOKING EFFECTS FLAVOR OF COOKED FISH

The method used by housewives to thaw frozen cod before cooking has a great deal to do with the flavor-appearance of the cooked product. An experiment conducted by the Home Economics Science Department of the University of Toronto proved that the method of thawing rather than oven temperature affected the palatability of cooked fish.

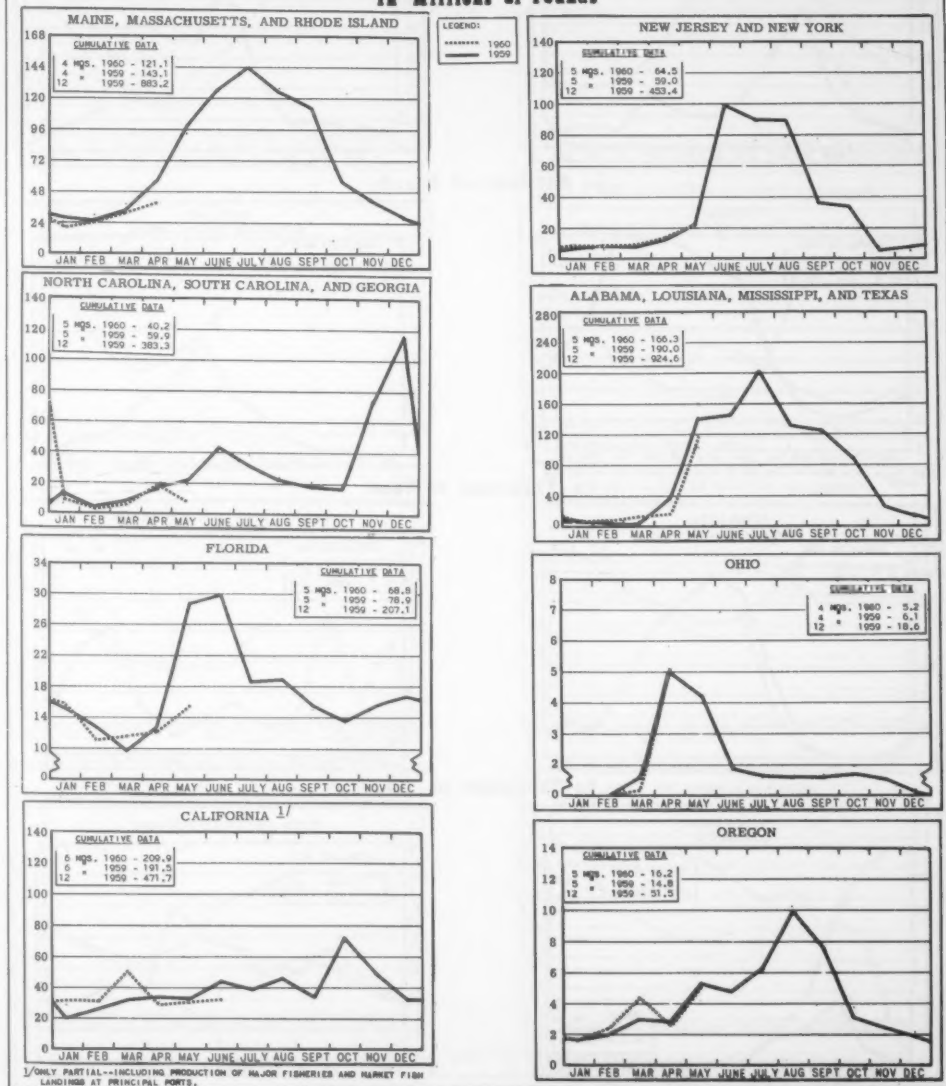
The results of the experiment clearly showed that there was no significant difference in flavor between cod cooked at high or low temperatures for varying lengths of time, but the method of thawing was another matter. A panel of five judges, especially trained in testing cod, expressed a preference for cod which was thawed by submersion in tap water (179 degrees F.) for 50 minutes before cooking over all other methods of defrosting.

Although the experiment was conducted along purely scientific lines, it employed basically the same apparatus found in the modern kitchen. The fish were placed in a freezer prior to the commencement of the experiment, and were cooked in a thermostatically-controlled oven.

# FISHERY INDICATORS

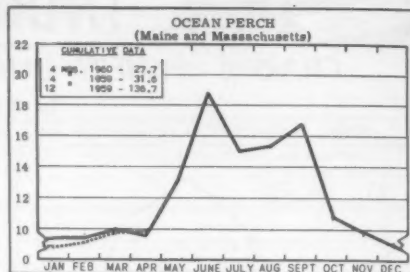
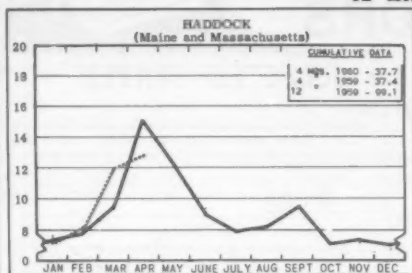
## CHART 1 - FISHERY LANDINGS for SELECTED STATES

In Millions of Pounds

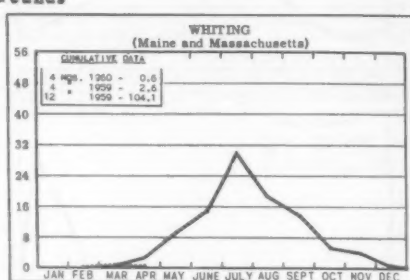
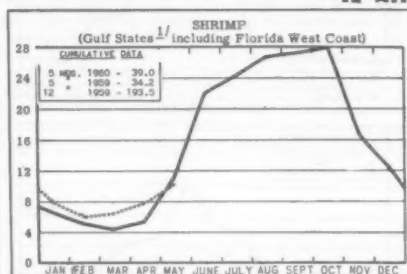


## CHART 2 - LANDINGS for SELECTED FISHERIES

In Millions of Pounds

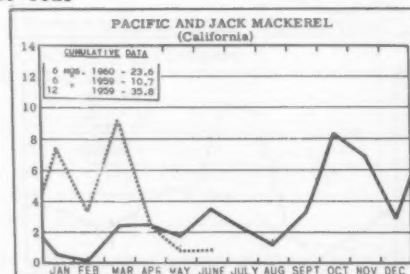
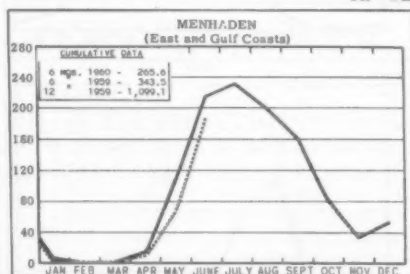


In Millions of Pounds

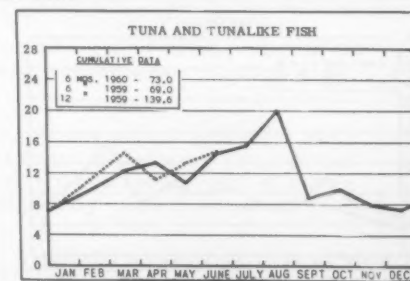
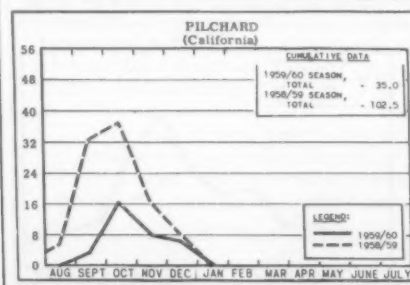


<sup>1/2</sup> A. & S. A. DATA BASED ON LANDINGS AT PRINCIPAL PORTS AND ARE NOT COMPLETE.

In Thousands of Tons



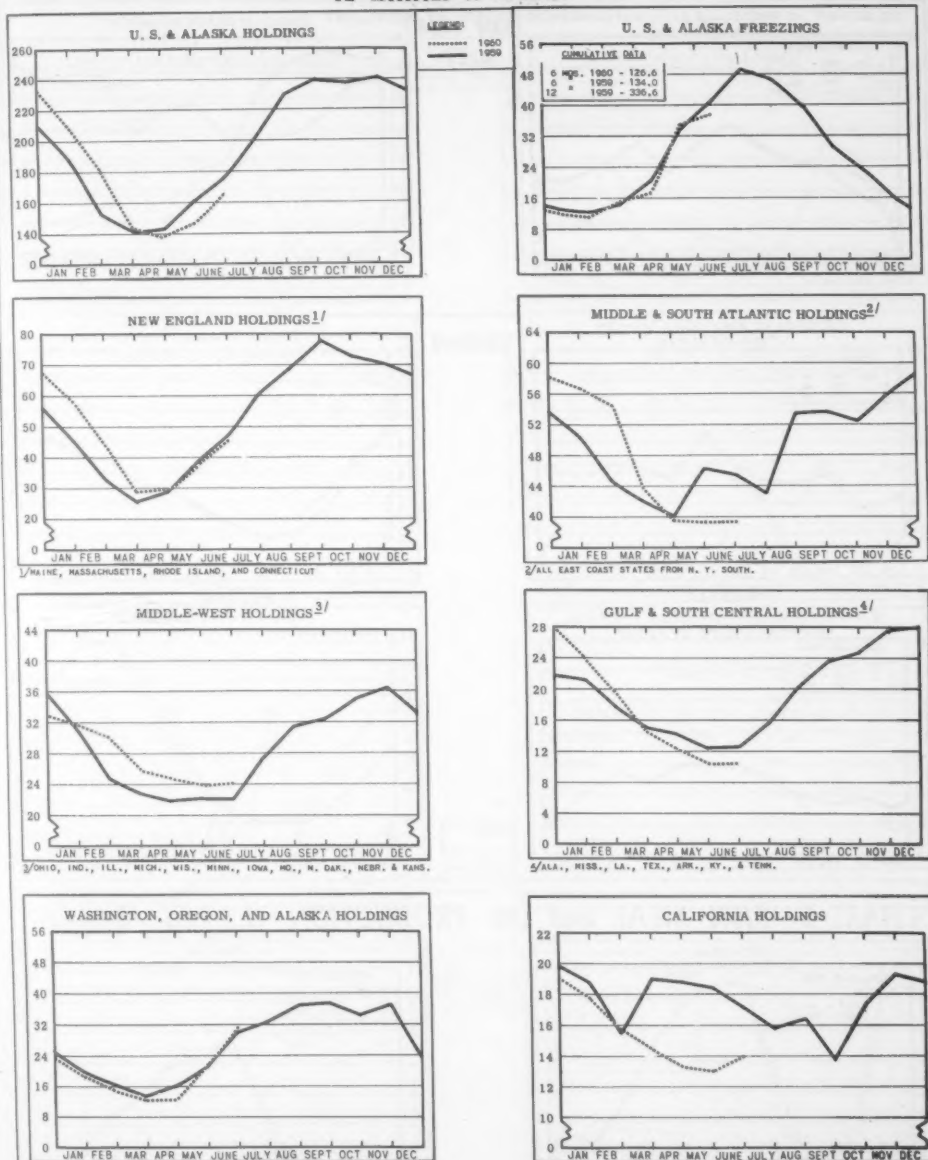
In Thousands of Tons





# CHART 3 - COLD-STORAGE HOLDINGS and FREEZINGS of FISHERY PRODUCTS \*

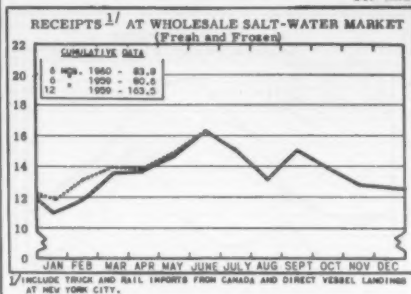
In Millions of Pounds



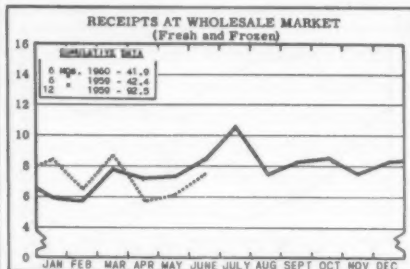
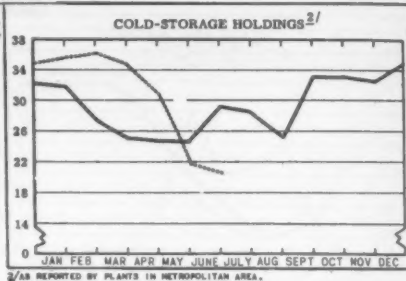
\* Excludes salted, cured, and smoked products.

# **CHART 4 - RECEIPTS and COLD-STORAGE HOLDINGS of FISHERY PRODUCTS at PRINCIPAL DISTRIBUTION CENTERS**

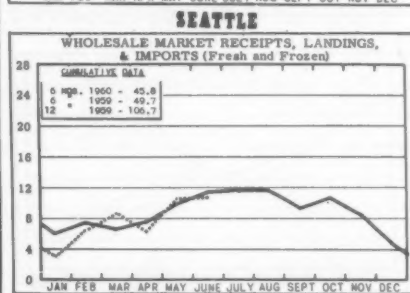
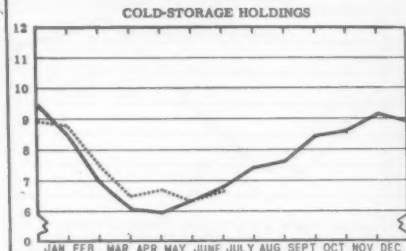
In Millions of Pounds



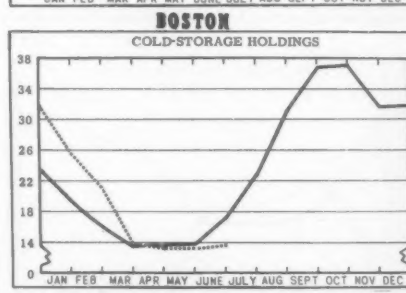
**NEW YORK CITY**



**CHICAGO**



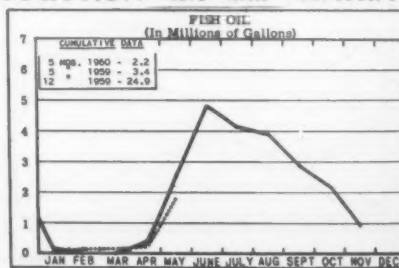
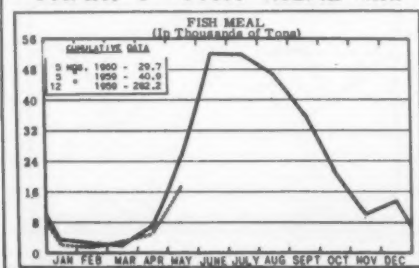
**SEATTLE**



**BOSTON**

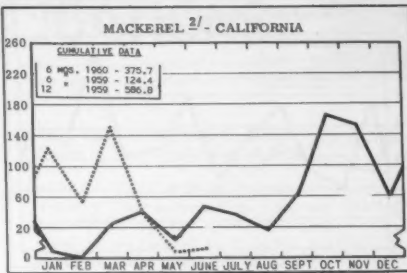
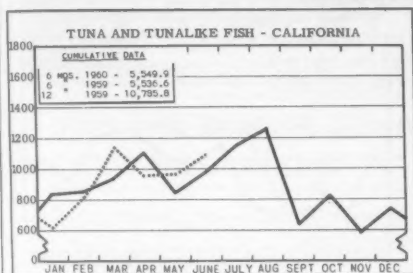
LEGEND:  
..... 1960  
----- 1959  
..... 1958

## **CHART 5 - FISH MEAL and OIL PRODUCTION - U.S. and ALASKA**

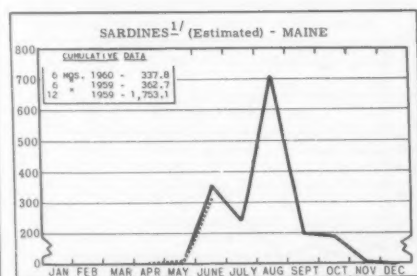
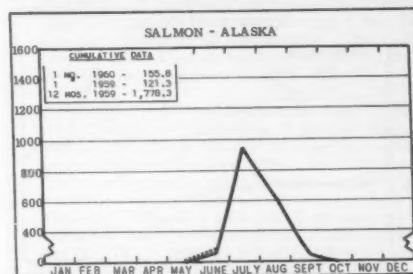
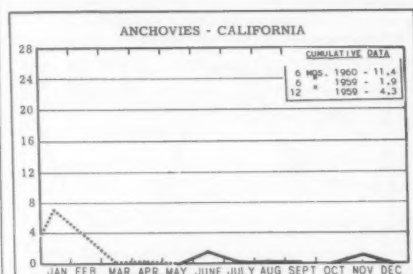


# CHART 6 - CANNED PACKS of SELECTED FISHERY PRODUCTS

In Thousands of Standard Cases

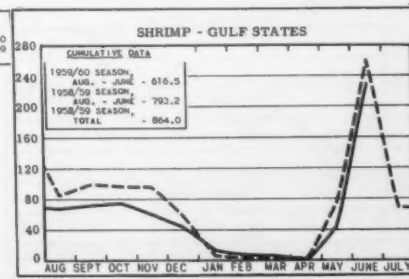
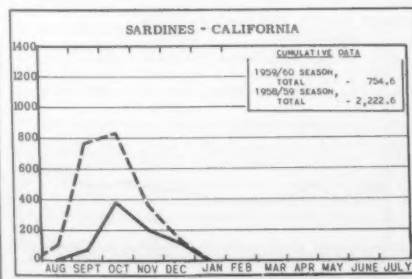


<sup>2/</sup> INCLUDES PACIFIC MACKEREL AND JACK MACKEREL.



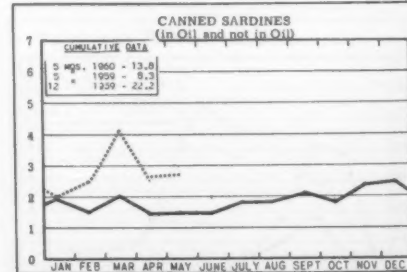
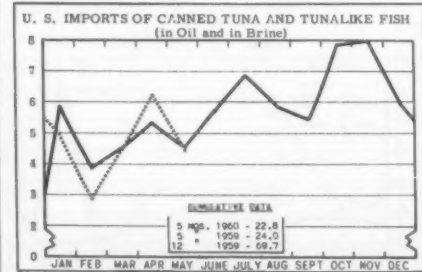
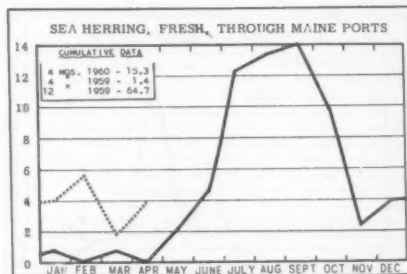
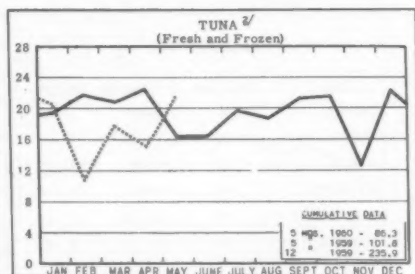
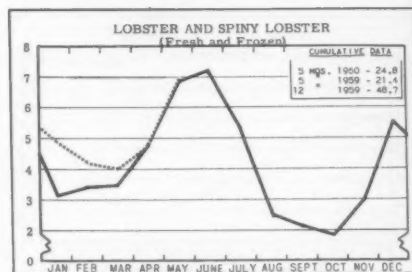
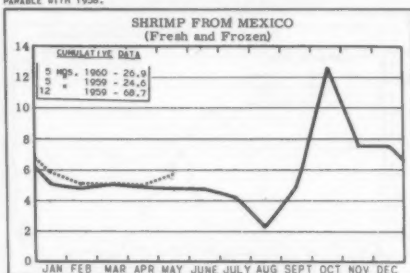
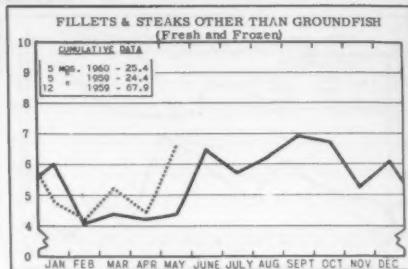
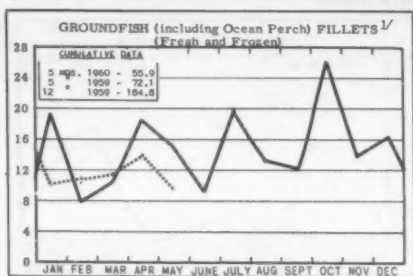
<sup>1/</sup> INCLUDING SEA HERRING.

STANDARD CASES			
Variety	No. Cans	Designation	Net Wgt.
SARDINES....	100	$\frac{1}{2}$ drawn	3 $\frac{1}{2}$ oz.
SHRIMP.....	48	—	5 oz.
TUNA.....	48	# $\frac{1}{2}$ tuna	6 & 7 oz.
PILCHARDS..	48	# 1 oval	15 oz.
SALMON.....	48	1-lb. tall	16 oz.
ANCHOVIES..	48	$\frac{1}{2}$ -lb.	8 oz.



# CHART 7 - U.S. FISHERY PRODUCTS IMPORTS

In Millions of Pounds





# RECENT FISHERY PUBLICATIONS

## FISH AND WILDLIFE SERVICE PUBLICATIONS

THESE PROCESSED PUBLICATIONS ARE AVAILABLE FREE FROM THE DIVISION OF INFORMATION, U. S. FISH AND WILDLIFE SERVICE, WASHINGTON 25, D. C. TYPES OF PUBLICATIONS ARE DESIGNATED AS FOLLOWS:

- CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES AND ALASKA.  
FL - FISHERY LEAFLETS.  
SL - BRANCH OF STATISTICS LISTS OF DEALERS IN AND PRODUCERS OF FISHERY PRODUCTS AND BYPRODUCTS.  
WL - WILDLIFE LEAFLETS.  
SSR - FISH - SPECIAL SCIENTIFIC REPORTS--FISHERIES (LIMITED DISTRIBUTION).  
SSR - WILDLIFE - SPECIAL SCIENTIFIC REPORTS--WILDLIFE (LIMITED DISTRIBUTION).  
SEP. - SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

Number	Title
CFS-2240	- Fish Meal and Oil, 1959 Annual Summary, 4 pp.
CFS-2286	- Fish Meal and Oil, March 1960, 2 pp.
CFS-2290	- Frozen Fish Report, April 1960, 8 pp.
CFS-2299	- Shrimp Landings, January 1960, 6 pp.
CFS-2301	- North Carolina Landings, March 1960, 3 pp.
CFS-2303	- South Carolina Landings, March 1960, 2 pp.
CFS-2304	- Alabama Landings, January 1960, 2 pp.
CFS-2305	- Mississippi Landings, February 1960, 2 pp.
CFS-2306	- Fish Sticks and Portions, January-March 1960, 3 pp.
CFS-2308	- Texas Landings, March 1960, 3 pp.
CFS-2309	- Rhode Island Landings, March 1960, 3 pp.
CFS-2310	- California Landings, January 1960, 4 pp.
CFS-2312	- Maine Landings, March 1960, 3 pp.
CFS-2314	- Oregon Landings, 1959 Annual Summary, 2 pp.
CFS-2316	- Alabama Landings, February 1960, 2 pp.
CFS-2317	- Imports and Exports of Fishery Products, 1955-1959 Annual Summaries, 10 pp.
CFS-2318	- Virginia Landings, April 1960, 3 pp.
CFS-2320	- Georgia Landings, April 1960, 2 pp.
CFS-2321	- North Carolina Landings, April 1960, 4 pp.
CFS-2322	- Alabama Landings, March 1960, 2 pp.
CFS-2323	- Fish Meal and Oil, April 1960, 2 pp.
CFS-2324	- South Carolina Landings, April 1960, 2 pp.
CFS-2325	- Ohio Landings, March 1960, 2 pp.
CFS-2326	- New Jersey Landings, March 1960, 3 pp.
CFS-2331	- New Jersey Landings, April 1960, 3 pp.

FL-178 (Revised October 1959) - Partial List of Fishing Boat Builders, 6 pp.

FL-478-1 - Canned Fish Consumer Purchases by Family Characteristics (October 1958-September 1959), 62 pp., illus., December 1959. The final report based on a broad marketing research program directed toward improving and expanding the canned tuna, salmon, and sardine markets. It is projected from a nationwide consumer panel of approximately 6,000 families representing 22,000 people. The data represent estimated purchases of canned fish by household consumers only.

The present report summarizes data on household consumer purchases of canned tuna, salmon, and sardines for the 12 months period October 1958-September 1959. It is developed from data appearing in the series of monthly reports entitled "Canned Fish Consumer Purchases". The data are based on reports covering 52 full weeks, whereas monthly data are derived from reports covering 4-week periods.

The purpose of this report is to provide additional information concerning buying practices of households as related to regions, city-size locations, and other socio-economic factors.

FL-481 (Revision of 1-3, April 1941) - Some Desirable Aquatic Plants for Use in Fish Ponds and Aquaria, 1 p., February 1959.

FL-488 - Age Determination of Fishes, by Fred E. Lux, 10 pp., illus.

FL-494 - Fish Mycobacteriosis (Tuberculosis), by Thomas J. Parisot, 3 pp., March 1959.

FL-497 - A "Virus" Disease of Chinook Salmon, by A. J. Ross and R. R. Rucker, 3 pp., March 1960.

WL-414 - Selected List of Fish and Wildlife Materials for Conservation Education, 2 pp., January 1960.

SL-10 - Wholesale Dealers in Fishery Products, Maryland, 1959 (Revised).

SL-101 - Firms Canning Salmon, 1959 (Revised).

SSR-Fish. No. 303 - Physical Oceanographic, Biological, and Chemical Data--South Atlantic Coast of the United States, Gill Cruise 8, by William W. Anderson and Jack W. Gehring, 231 pp., illus., July 1959.



SSR-Fish. No. 324 - Blood Types in Pacific Salmon, by George J. Ridgeway and George W. Klontz, 12 pp., January 1960.

SSR-Fish. No. 332 - Mycobacterial Infections in Adult Salmon and Steelhead Trout Returning to the Columbia River Basin and Other Areas in 1957, by A. John Ross, Brian J. Earp, and James W. Wood, 36 pp., illus., December 1959.

SSR-Fish. No. 333 - Occurrence and Significance of Trimethylamine Oxide in Marine Animals, by Herman S. Groninger, 24 pp., December 1959. Discusses the finding of trimethylamine oxide in invertebrates as well as molluscs, crustaceans, fish, and other animals. The zooplankton are the first animals in the food chain that contain trimethylamine oxide, a substance which may be synthesized in the cells and may be a product of protein metabolism. Its occurrence in marine animals is interesting because of its indirect effect on the quality of seafood.

SSR-Wildlife No. 48 - Sea Otter Population and Transplant Studies in Alaska, 1959, by Karl W. Kenyon and David L. Spencer, 32 pp., illus., March 1960. Part I of this report presents details of an aerial survey of the western Aleutian area, 1959, and estimates of the sea otter population of Alaska. Part II discusses the sea otter transplant from Amchitka Island to the Pribilofs in 1959. This was the first successful sea otter transplant ever accomplished.

Sep. No. 593 - Proximate Composition of Southern Oysters--Factors Affecting Variability.

Sep. No. 594 - Processing and Quality Studies Held in Refrigerated Sea Water and Ice: Part 4 - Interchange of the Components in the Shrimp-Refrigerated-Sea-Water System.

Sep. No. 595 - Research in Service Laboratories (July 1960): Contains these articles--"Technical Note No. 56 - Chemical Composition and Laboratory Fillet Yield of 13 Species of Middle and South Atlantic Fish," and "Seasonal Variation of Physical Characteristics and Chemical Composition of Fish from Middle Atlantic States."

A Program of Research and Development for the Pacific Coast Tuna Industry, Circular 87, 9 pp., printed. Outlines a program of research and development aid for the Pacific Coast tuna industry. While the legislation authorizing and directing the Bureau to assist the fisheries is broad, the program proposed to aid the tuna fishery stresses those activities that give the most promise of being useful to the industry. The Bureau proposes to assist the tuna fishing industry in three major fields: (1) by helping the domestic fleets find and catch fish more quickly; (2) by helping the fishermen deliver higher quality fish to the canneries and, in turn, help the processors improve their products; and (3) by keeping the domestic industry well informed of activities and developments respecting tuna, both domestic and world-wide, as they may affect production and marketing in the United States, so that the industry can plan its operations intelligently under changing conditions.

Tuna Industry Conference Papers, May 1959, Circular 65, 113 pp., illus., processed, November 1959. Selected papers of the Government-Industry Tuna Conference at Scripps Institution of Oceanography, La Jolla, Calif., May 19-21, 1959. The papers, written by both industry and government specialists in various fishery fields, are grouped by categories. Part 1--The World Tuna Resource and Fishery, includes "The Tuna Resource in Relation to Oceanographic Features," by Vernon E. Brock; "Tuna Fishing Methods and Their Application," by Vernon E. Brock; "World Tuna Production," by Donald R. Johnson; "Status of the Fishery for Tunas of Tropical Waters of the Eastern Pacific," by Milner B. Schaefer; "Status of the Fishery for Tunas of the Temperate Waters of the Eastern Pacific (Abstract)," by Harold B. Clemens; and "Some Observations on Present and Future Japanese Tuna Fisheries," by Wilvan G. Van Campen. Part 2--The Domestic Tuna-Fishing Industry, contains: "Harvesting the Tuna Resource," by Gerald V. Howard; "Handling and Transporting to the Cannery, Part A," by Clarence J. Carlson; "Handling and Transporting to the Cannery, Part B," by Sven Lassen; "Fisheries Loan and Mortgage Programs," by Lester T. Bradbury; and "Publications of the Bureau of Commercial Fisheries of Interest to the Tuna Industry," by Donald R. Johnson. Part 3--Processing and Marketing Tuna, consists of: "Sources of Tuna Consumed in the United States," by Victor J. Samson and Anthony D. Sokolich; "The Processing of Tuna," by Maurice E. Stansby; "Marketing Tuna in the United States," by Donald Y. Aska; "Marketing Tuna in Foreign Countries," by Arthur M. Sandberg; and "Trade Agreements and How They are Made," by Arthur M. Sandberg.

THE FOLLOWING PUBLICATIONS ARE AVAILABLE ONLY FROM THE SPECIFIC OFFICE MENTIONED:

(Baltimore) Monthly Summary - Fishery Products, January 1960, 10 pp. (Market News Service, U. S. Fish and Wildlife Service, 400 E. Lombard St., Baltimore 2, Md.) Receipts at Baltimore by species and by states and provinces for fresh- and salt-water fish and shellfish; total receipts by species and comparisons with previous years; and wholesale prices on the Baltimore market; for the month indicated.

California Fishery Products Monthly Summary, April 1960, 13 pp. (Market News Service, U. S. Fish and Wildlife Service, Post Office Bldg., San Pedro, Calif.) California cannery receipts of tuna and tunalike mackerel, and anchovies; pack of canned tuna, mackerel, anchovies; market fish receipts at San Pedro, Santa Monica, and Eureka areas; California imports; canned fish and frozen shrimp prices; ex-vessel prices for cannery fish; American Tuna Boat Association auction sales; for the month indicated.

(Chicago) Monthly Summary of Chicago's Fresh and Frozen Fishery Products Receipts and Wholesale Market Prices, April 1960, 13 pp. (Market News Service, U. S. Fish and Wildlife Service, 565 W. Washington St., Chicago 6, Ill.) Receipts at Chicago by species and by states

and provinces for fresh- and salt-water fish and shellfish; and wholesale prices for fresh and frozen fishery products; for the month indicated.

Gulf Monthly Landings, Production, and Shipments of Fishery Products, April 1960, 8 pp. (Market News Service, U. S. Fish and Wildlife Service, 609-611 Federal Bldg., New Orleans 12, La.) Gulf States shrimp, oyster, finfish, and blue crab landings; crab meat production; LCL express shipments from New Orleans; wholesale prices of fish and shellfish on the New Orleans French Market; sponge sales; and fishery imports at Port Isabel and Brownsville, Tex., from Mexico; for the month indicated.

Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina, and Maryland, May 1960, 4 pp. (Market News Service, U. S. Fish and Wildlife Service, 18 So. King St., Hampton, Va.) Fishery landings and production for the Virginia areas of Hampton Roads, Lower Northern Neck, and Eastern Shore; the Maryland areas of Crisfield, Cambridge, and Ocean City; and the North Carolina areas of Atlantic, Beaufort, and Morehead City; together with cumulative and comparative data; for the month indicated.

New York City's Wholesale Fishery Trade--Monthly Summary for April 1960, 17 pp. (Market News Service, 155 John St., New York 38, N. Y.) Includes summaries and analyses of receipts and prices on wholesale Fulton Fish Market, imports entered at New York City, primary wholesaler prices for frozen products, and marketing trends; for the month indicated.

(Seattle) Washington, Oregon, and Alaska Receipts and Landings of Fishery Products for Selected Areas and Fisheries, Monthly Summary, May 1960, 9 pp. (Market News Service, U. S. Fish and Wildlife Service, Pier 42 South, Seattle 4, Wash.) Includes landings and local receipts, with ex-vessel and wholesale prices in some instances, as reported by Seattle and Astoria, (Ore.) wholesale dealers; also Northwest Pacific halibut landings; and Washington shrimp landings; for the month indicated.

Information and Explanatory Statement for Daily New England Market News Service "Fishery Products Reports" Issued at Boston, 10 pp., June 1960. (Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston 10, Mass.) Includes a brief description of the fisheries in the various New England ports, and the trading practices. Meanings and definitions of the various abbreviations and terms used in Market News reports are explained.

Honolulu Biological Laboratory--Past (1949-1958)--Present (1959)--Future (1960), by V. E. Brock and J. C. Marr, Fish and Wildlife Circular 83, 65 pp., illus., processed. Honolulu Biological Laboratory, U. S. Bureau of Commercial Fisheries, Honolulu, Hawaii, April 1960. Covers results of research during 1949-1958 on oceanography, fishery resources, bait supplements,

technology, gear development, and biology and behavior of tunas. The 1959 section covers the exploration program; and information on areas of abundance and relation of stocks, efficiency of capture, and bait supplements. The plans for future investigations are discussed briefly. Also includes a bibliography of the Laboratory's publications and translations for 1949-1958.

THE FOLLOWING MARKET NEWS LEAFLET IS AVAILABLE FROM THE BRANCH OF MARKET NEWS, BUREAU OF COMMERCIAL FISHERIES, U. S. FISH AND WILDLIFE SERVICE, WASHINGTON 25, D. C.

Number	Title
MNL-18	Fisheries of Panama.

THE FOLLOWING SERVICE PUBLICATIONS ARE FOR SALE AND ARE AVAILABLE ONLY FROM THE SUPERINTENDENT OF DOCUMENTS, WASHINGTON 25, D. C.

Annotated Bibliography on Biology of American Menhaden, by John W. Reintjes, James Y. Christman, Jr., and Richard A. Collins, Fishery Bulletin 170 (from Fishery Bulletin of the Fish and Wildlife Service, vol. 60), pp. 297-322, printed, 25 cents, 1960.

Determining Age of Atlantic Menhaden From Their Scales, by Fred C. June and Charles M. Roithmayr, Fishery Bulletin 171 (from Fishery Bulletin of the Fish and Wildlife Service, vol. 60), pp. 323-342, illus., printed, 20 cents, 1960.

Estimates of Larval Tuna Abundance in the Central Pacific, by Donald W. Strasburg, Fishery Bulletin 187 (from Fishery Bulletin of the Fish and Wildlife Service, vol. 60), pp. 231-255, illus., printed, 25 cents, 1960.

Oceanography of the East Central Equatorial Pacific as Observed During Expedition Eastropic, by Thomas S. Austin, Fishery Bulletin 168 (from Fishery Bulletin of the Fish and Wildlife Service, vol. 60), pp. 257-282, illus., printed, 35 cents, 1960.

Statistics of the Alaska Herring Fishery, 1878-1956, by Bernard E. Skud, Henry M. Sakuda, and Gerald M. Reid, Statistical Digest No. 48, 24 pp., illus., printed, 25 cents, 1960. Statistics of the herring fishery in Alaska are summarized for the years 1878 to 1956 insofar as detailed data were available. Catches are recorded by statistical areas in Southeastern Alaska, Prince William Sound, and Kodiak and represent a revision of previously-published figures calculated by converting meal production to pounds of fish. Products of the fishery and the statistics of operation are summarized for all Alaska.

Systematics and Biology of the Gizzard Shad (Dorosoma cepedianum) and Related Fishes, by Robert Rush Miller, Fishery Bulletin 173 (from Fishery Bulletin of the Fish and Wildlife Service, vol. 60), pp. 371-392, illus., printed, 25 cents, 1960.

## MISCELLANEOUS PUBLICATIONS

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM. CORRESPONDENCE REGARDING PUBLICATIONS THAT FOLLOW SHOULD BE ADDRESSED TO THE RESPECTIVE ORGANIZATION OR PUBLISHER MENTIONED. DATA ON PRICES, IF READILY AVAILABLE, ARE SHOWN.

### ADEN:

A Report on the Fisheries of Aden Colony, The Western Aden Protectorate, and The Eastern Aden Protectorate, 1947-1958, 28 pp., illus., printed, 1s 5d (about 20 U.S. cents). The Fisheries Department, Aden, Aden Protectorate. The first report of the Fisheries Department of Aden, summarizing the fishery activities under a program launched in 1947 to assess the fishery possibilities in not only the Aden Protectorate but the Gulf of Aden area generally. It also includes accounts of activities carried out by the Department since its establishment in 1949 and up to the end of December 1958. Contains, among others, sections on the history of the fisheries, mechanization of the fishing fleet, and the use of improved fishing gear. Also contains information on vitamin A fish oils, nonvitamin A fish oils, the canning of fishery products, a potential offshore rock fishery along the Western Aden Protectorate coast, and colloquial and scientific nomenclature of the more common fishes found in the Gulf of Aden.

### ANCHOVIES:

Estudio Biológico Pesquero de la Anchoita (ENGRAULIS ANCHOITA) de Mar del Plata--Análisis de los caracteres merísticos (Fishery Biological Study of the Anchovy (Engraulis anchoita) of Mar del Plata--Analysis of Their Meristic Characters), by María Luisa Fuster de Plaza and Enrique E. Boschi, no. 7, 55 pp., illus., printed in Spanish with English summary. Secretaría de Agricultura y Ganadería, Departamento de Investigaciones Pesqueras, Buenos Aires, Argentina, 1958.

### ANTIBIOTICS:

"The Penetration of Chlortetracycline into Tissues of Sockeye Salmon on CTC-Dip Treatment and its Destruction on Heating," by Tetuo Tomiyama, Yasuo Yone and Kunio Kobayashi, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 24, no. 12, 1959, pp. 1012-1018, printed in Japanese with English abstracts. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori 6-chome, Tokyo, Japan.

"Use of Aureomycin-Ice for the Preservation of Squid," by Kokichi Oshima, article, Hokusuishi Geppo, vol. 16, 1959, pp. 108-117, printed in Japanese. Hokusuishi Geppo, Hokkaido Fisheries Scientific Institute, Yoichi, Hokkaido, Japan.

### ARGENTINA:

Recursos Icticos del Sector Antártico Argentino--Aspectos Sobre su Aprovechamiento en Georgias del Sur (Fishery Resources of the Argentine Antarctic Region--Aspects of Their Development in South Georgia), by Italo Santiago Car-

rara, 23 pp., illus., processed in Spanish. Universidad Nacional de la Plata, La Plata, Argentina, 1955.

### BARENTS SEA:

Results of the Marking of Demersal Fishes of the Barents Sea During the Period 1946-1955, by K.G. Konstantinov, 13 pp., processed. (Translated from Pinro, vol. X, 1957, pp. 78-87). Ministry of Agriculture, Fisheries and Food, Fisheries Laboratory, Lowestoft, England, 1959.

### BIOCHEMISTRY:

"Distribution of a Lipase Enzyme in Lingcod Fillets and the Effect of Low Temperature Storage on its Activity," by J.D. Wood, article, Journal of the Fisheries Research Board of Canada, vol. 16, October 1959, pp. 755-757, printed. Journal of the Fisheries Research Board of Canada, Queen's Printer & Controller of Stationery, Ottawa, Canada.

"Electrophoretic Analysis of Fluids Obtained from Mechanically Disrupted and Frozen Fish Muscle," by Harry L. Seagran, article, Food Research, vol. 24, November-December 1959, pp. 681-687, printed. Food Research, Department of Food Technology, University of California, Davis, Calif.

### BIOLOGY:

Fresh-Water Biology, second edition, 1,264 pp., illus., printed. John Wiley & Sons, 440 Fourth Ave., New York 16, N.Y., 1959.

### BROOK TROUT:

The Sea-Run or "Salter" Brook Trout (SALVELINUS FONTINALIS) Fishery of the Coastal Streams of Cape Cod, Massachusetts, by James W. Mullan, Bulletin No. 17, 25 pp., illus., printed. Massachusetts Division of Fisheries and Game, 73 Tremont St., Boston, Mass., May 1958.

### CALIFORNIA:

The Marine Fish Catch of California (For the Years 1957 and 1958), Fish Bulletin No. 108, 74 pp., illus., printed. Department of Fish and Game, Sacramento, Calif., 1960. Tables in this bulletin summarize in various ways the final 1957 and 1958 landings of fish, mollusks, and crustaceans in California by commercial fishing vessels or shipped into California for processing. Statistical data cover annual landings and shipments, 1916-1958; landings and shipments of leading species by pounds and value; licensed commercial fishermen; number of fishing boats by length; origin of shipments, 1957 and 1958; origin of commercial fish landings, 1957 and 1958; monthly landings and shipments, 1957 and 1958--statewide and by areas; value and poundage, annual landings by areas, 1957 and 1958; value of landings by ports and areas, 1957 and 1958; sport catch, 1949-1958; and live-bait catch, 1954-1958. Also contains list of common and scientific names of fish, crustacean, and mollusks.

### CANADA:

The Boat Building Industry, 1958, by Dominion Bureau of Statistics, March 1960, 11 pp., illus., printed, 50 Canadian cents. The Queen's Printer and Controller of Stationery, Ottawa, Canada.

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

Canada (Saskatchewan): An Act Respecting Co-Operative Fisheries Limited, Food and Agricultural Legislation, vol. VIII, no. 3, XVIII. 2/59.1, 15 pp., printed, \$1. Food and Agriculture Organization of the United Nations, Rome, Italy, 1959. (For sale by Columbia University Press, International Documents Service, 2960 Broadway, New York 27, N.Y.)

Canadian Shellfish for Everyday Meals, Consumer Bulletin No. 6, 16 pp., printed. Queen's Printer, Ottawa, Canada.

Fisheries Statistics of British Columbia, 1959 (preliminary), 14 pp., illus., processed. Canadian Department of Fisheries, Vancouver, Canada, April 1960.

Journal of the Fisheries Research Board of Canada, vol. 16, no. 5, October 1959, 197 pp., illus., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada. Includes, among others, articles on "Proximate Analysis of Pacific Herring (*Clupea pallasii*) and an Evaluation of Tester's 'Fat Factor'," by J.R. McBride, R.A. MacLeod, and D.R. Idler; "Homing of Rainbow Trout to Inlet and Outlet Spawning Streams at Loon Lake, British Columbia," by C.C. Lindsey, T.G. Northcote, and G.F. Hartman; "A Concept of Growth in Fishes," by Robert R. Parker and Peter A. Larkin; "The Effect of Sodium Chloride on Proteolysis and on the Fate of Amino Acids Present in the Muscle of Codfish (*Gadus callarias*)," by E. Bilinaki and H. Fougere; and "Distribution of a Lipase Enzyme in Lingcod Fillets and the Effect of Low Temperature Storage on its Activity," by J.D. Wood.

Journal of the Fisheries Research Board of Canada, vol. 17, no. 2, March 1960, 167 pp., illus., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada. Contains, among others, these articles: "International Passamaquoddy Fisheries Board Fisheries Investigations 1956-59. Introductory Account," by J.L. Hart and D.L. McKernan; "Herring Fishery in Southern New Brunswick," by R.A. McKenzie and S.N. Tibbo; "Predicted Effects of Proposed Tidal Power Structures on Groundfish Catches in Charlotte County, N.B.," by W.R. Martin; "Studies of Haddock in the Passamaquoddy Bay Region," by F.D. McCracken; "Critical Size and Maximum Yield for Chinook Salmon (*Oncorhynchus tshawytscha*)," by Robert R. Parker; "Seasonal Distribution of Some Epipelagic Fishes in the Gulf of Alaska Region," by Ferris Neave and M.G. Hanavan; "The Food of the Redfish *Sebastes marinus* (L.) in the Newfoundland Area," by D.G. Lambert; and "Description of Young *Ammocoetes* Belonging to Two Species of Lampreys: *Petromyzon marinus* and *Entosphenus lamottii*," by Vadim D. Vladykov.

"Passamaquoddy Fisheries Investigations," by S.N. Tibbo and L.R. Day, article, Trade News, vol. 12, no. 8, February 1960, pp. 3-8, illus., processed. Information and Educational Service, Department of Fisheries, Ottawa, Canada. Discusses the economic feasibility of the Passamaquoddy Tidal Power Project. Since 1956,

Canadian and American scientists have been investigating the power potential in the tidal waters of Passamaquoddy Bay, on the U.S.-Canadian border adjacent to New Brunswick's Bay of Fundy. Oceanographic and biological studies were conducted to determine possible effects of the power project on the prosperous herring and groundfish fisheries. Findings showed that the general abundance of herring in the Bay of Fundy and the Gulf of Maine is unlikely to be affected.

Temperatures in Frozen Fish Shipped by Road in Refrigerated Trailers, by C.P. Lentz and E.A. Rooke, 3 pp., illus., printed, limited distribution. (Reprinted from Canadian Food Industries, February 1960.) Canadian Scientific Liaison Office, 1907 K St., N.W., Rm. 403, Washington 6, D.C.

#### CHILE:

Informaciones Estadísticas Sobre Pesca-Producción Por Especies Comparadas Entre Los Años 1944 a 1951 en Toneladas (Statistical Information on Fisheries--Comparisons of Production by Species Between 1944 and 1951 in Tons), 57 pp., illus., printed in Spanish. Departamento de Fomento de Pesca Y Caza, Valparaíso, Chile, 1953.

#### COALFISH:

"Behavior of the Young of Coalfish with Respect to a Moving Net Trap (Aquarium Experiments)," by D.V. Radakov and D.S. Nikolaev, article, Zoologicheskii Zhurnal, vol. 38, no. 7, 1959, pp. 1103-1108, printed in Russian with English summary. Akademiia Nauk SSSR, Redaktsiia Zoologicheskogo Zhurnala, Podmosenskii per. d. 21, Moscow B-64, U.S.S.R.

#### COD:

"Características de Bacalhan com Falta de Sal" (Characteristics of Cod Low in Salt), by J. Freixo, article, Conservas de Peixe, vol. 13, no. 152, November 1958, pp. 18-19, printed in Portuguese. Conservas de Peixe, Regueirao dos Anjos, 68, Lisbon, Portugal.

#### COMPOSITION:

"Proximate Analysis of Pacific Herring (*Clupea pallasii*) and an Evaluation of Tester's 'Fat Factor'," by J.R. McBride, R.A. MacLeod, and D.R. Idler, article, Journal of the Fisheries Research Board of Canada, vol. 16, October 1959, pp. 679-684, printed. Journal of the Fisheries Research Board of Canada, Queen's Printer & Controller of Stationery, Ottawa, Canada.

#### CRAB MEAT:

"Studies on the 'Browning' of Canned Crab Meat. IV--Soaking of the Raw Material in Water and Heating," by Yoshio Nagasawa, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 24, no. 12, 1959, pp. 971-975, printed in English. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shibakaidori 6-chome Tokyo, Japan.

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The Migrations of Adult Female Blue Crabs, CALLINECTES SAPIDUS Rathbun, in Chinco-



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teague Bay and the Adjacent Waters, by D.G. Cargo, Contribution No. 121, 12 pp., illus., printed. (Reprinted from Sears Foundation: Journal of Marine Research, vol. 16, no. 3, October 15, 1958, pp. 180-191.) Department of Research and Education, Chesapeake Biological Laboratory, Solomons, Md.

#### CROAKERS:

Disappearance of Young Atlantic Croakers from the York River, Virginia, by William H. Massmann and Anthony L. Pacheco, 6 pp., illus., printed. (Reprinted from Transactions American Fisheries Society, vol. 89, no. 2, 1960, pp. 154-159.) Virginia Fisheries Laboratory, Gloucester Point, Va.

#### DELAWARE RIVER:

Information Bulletin--Delaware River Basin Study, 41 pp., illus., printed. U.S. Army Engineer District, Philadelphia, Pa., 1960. Presents a brief summary of Delaware River Basin water needs and a tentative plan of development. The water control plan is a guide to the development of the basin's water resources so that these water resources will meet the increasing requirements of the continually expanding Delaware basin community. The plan presented is tentatively under consideration and is not necessarily the final plan to be recommended to the Congress on completion of the survey. Benefits of the plan, including increased possibilities for fishing, are discussed briefly.

#### EAST AFRICA:

East African Fisheries Research Organization Annual Report, 1959, 48 pp., printed. East African Fisheries Research Organization, P.O. Box 343, Jinja, Uganda. Describes scientific work accomplished in the study of Lake Victoria fisheries, experimental fishing, growth of fish under controlled conditions, fish in ponds, identification of tilapia, fish parasites, food of fishes, control of snails, and related subjects. Also includes a bibliography of recent publications on East African fisheries and related subjects, and appendices of research papers on fisheries.

#### EELS:

"Migration of the European River Eel (*Anguilla anguilla* (L.)) in Atlantic Waters," by V.D. Lebedev, article, Nauchnye Doklady Vyssel Shkoly: Biologicheskie Nauki, no. 3, 1959, pp. 43-53, printed in Russian. Gosudarstvennoe Izdatel'stvo "Vysshaya Shkola," Podosenskii per. 20, Moscow B-62, U.S.S.R.

#### EXPORTS:

United States Exports of Domestic and Foreign Merchandise (Commodity by Country of Destination), Calendar Year 1959, Report No. FT 410, processed, Part I, 172 pp., \$1.25; Part II, 302 pp., \$2. U.S. Department of Commerce, Bureau of the Census, Washington, D.C., March 1960. (For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.) The statistics in Part I cover United States exports of domestic and foreign

merchandise (including fishery products and byproducts) under group 00 through group 5, Part II covers merchandise under groups 6 through 9 (some items of interest to the fishery and allied industries are included). Data are shown by commodity by country of destination.

United States Exports of Domestic and Foreign Merchandise (Country of Destination by Subgroup), Calendar Year 1959, Report No. FT 420, 83 pp., processed, 50 cents. U.S. Department of Commerce, Bureau of the Census, Washington, D.C., March 1960. (For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.) The statistics in this report cover United States exports of domestic and foreign merchandise (including fishery products and byproducts) under approximately 100 subgroups by country of destination by subgroup.

#### FAUNA:

Corixid Insects as Part of the Offshore Fauna of the Sea, by Gordon Gunter and J. Y. Christmas, 2 pp., illus., printed. (Reprinted from Ecology, vol. 40, no. 4, October 1959, pp. 724-725.) Gulf Coast Research Laboratory, Ocean Springs, Miss.

#### FEDERAL TRADE COMMISSION:

Guides for Advertising Allowances and Other Merchandising Payments and Services; Compliance with Sections 2 (d) and 2 (e) of the Clayton Act, as Amended by the Robinson-Patman Act, 10 pp., printed. Federal Trade Commission, Washington 25, D.C., May 19, 1960. A pamphlet for businessmen on guides for advertising allowances and other merchandising payments and services. This pamphlet can be of value in complying with the laws against giving or receiving improper promotional allowances, including advertising or special services, for promoting products. It will make possible a better understanding of the obligations of sellers and their customers in joint promotional activities. These guides are designed to be both practical and understandable. They contain carefully considered suggestions, or general rules of thumb, which business will find very useful in preventing unintentional violations. They highlight the requirements of law and offer means for complying with it. Also included in the pamphlet is the full text of the Robinson-Patman Act, and what the law covers generally.

#### FISH MEAL:

"The Carbonate Content of Some Fish and Shellfish Meals," by Claude E. Thurston and Patricia P. MacMaster, article, Journal of the Association of Official Agricultural Chemists, vol. 42, November 1959, pp. 699-702, printed. Association of Official Agricultural Chemists, Box 540, Benjamin Franklin Station, Washington 4, D.C.

"Spontaneous Heating of Fish Meal--II," by C.J. H. Van den Broek, article, Food Manufacture, vol. 34, October 1959, pp. 387-390, printed. Food Manufacture, Leonard Hill, Ltd., Stratford House, 9 Eden St., London NW1, England.



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#### FISH OIL:

"Preparation of Quaternary Ammonium Salts from Fish Oil and Their Antibiotic Action," by Masamichi Toyomizy, Noriyuki Enomoto, and Yukio Tomiyasu, article, *Bulletin of the Japanese Society of Scientific Fisheries*, vol. 24, no. 9, 1959, pp. 743-748, printed in Japanese with English abstracts. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori 8-chome, Tokyo, Japan.

#### FISH SOLUBLES:

"Condensed Fish Solubles. A Review of Its Preparation and Properties," by Robert A. MacLeod, article, *Journal of the Fisheries Research Board of Canada*, vol. 16, no. 5, October 1959, pp. 685-694, printed. Queen's Printer and Controller of Stationery, Ottawa, Canada. Describes the method of preparing condensed solubles by concentrating stickwater after first treating it with acid or enzymes to remove or destroy unwanted proteins. The amino acid and vitamin content of condensed solubles is discussed with particular reference to factors such as freshness of the fish, degree of spoilage of the stickwater, and methods of processing the solubles which cause variations in the levels of these nutrients. The composition of the solubles is also determined by the species of fish used, the age and extent of maturation of the fish, and by the type of material (whether whole fish or scraps) from which it is prepared. The use of condensed fish solubles as a feed supplement is discussed. The need for using solubles of known history both in formulating rations and in nutrition studies is stressed.

#### FISHERY RESOURCES:

Can We Manage Our Coastal Fishery Resources?, by J. L. McHugh, 6 pp., printed. (Reprinted from *Transactions of the American Fisheries Society*, vol. 88, 1959, pp. 105-110.) Virginia Fisheries Laboratory, Gloucester, Va. In summary, the author states that "A fresh approach to coastal fisheries problems is needed; one including more biological and educational work and investigation of economic, social, and political factors which are potent influences in the interaction of fisheries resources and man. The conventional approach, by methods designed to foster management for optimum sustained yield for each important species, holds little promise for management of migratory fish in inshore waters of the Atlantic Coast. More consideration should be given to management of the biomass of the entire resource." Some statistics of the Atlantic Coast fisheries are given and promising approaches for bettering management discussed.

#### FLOUNDERS:

Flounders and Their Cousins Unique Fish, by C. M. Bearden, Education Release 177, 5 pp., illus., printed. (Reprinted from *South Carolina Wildlife*, 1960.) Bears Bluff Laboratories, Wadmalaw Island, S. C.

FOOD AND AGRICULTURE ORGANIZATION: Catalogue of FAO Fisheries Publications, October 1959, compiled by Patricia M. Andrews,

FAO/59/10/7400, 17 pp., processed. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy.

Current Bibliography for Aquatic Sciences and Fisheries, vol. 2, no. 10, December 1959, 232 pp., processed. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy.

Indo-Pacific Fisheries Council Proceedings, 8th Session, Colombo, Ceylon, December 6-22, 1958, Section I, 193 pp., printed, US\$1. IPFC Secretariat, FAO Regional Office for Asia and the Far East, Bangkok, Thailand, 1958. (For sale by Publications Section, Food and Agriculture Organization of the United Nations, Rome, Italy). The full proceedings of this meeting consist of three sections of which the first, a report of the proceedings of the 8th Session, is contained in this issue. Section II, the technical papers presented at the meeting by delegations, and Section III, papers read at a symposium on fish behavior, are combined as a separate issue. The present report contains chapters on the Council procedure, resources, technology and economics, publications, technical assistance, recommendations, and a report on the status of the industry. Member governments of the Indo-Pacific Fisheries Council include Australia, Ceylon, France, India, Japan, Korea, Federation of Malaya, Netherlands, Thailand, United Kingdom, the United States, and Vietnam.

Mediterranean Trawling (Fourth Report--Malta, August 1959), by J. Scharfe, GFCM Studies and Reviews No. 10, 23 pp., illus., processed. General Fisheries Council for the Mediterranean Secretariat, Food and Agriculture Organization of the United Nations, Rome, Italy, March 1960. This report covers a rational study of Mediterranean-type trawls and considerations concerning utilization of engine, variable pitch propeller, and winch. These experiments were mainly devoted to collecting comparative performance data for the conventional Italian-type bottom trawl, the modified sand-eel trawl, and a high opening sprat trawl, the latter two representing northern European designs made of machine-braided nylon webbing, cut to shape. Furthermore, an elliptical-type otter board of Russian design was tested again. Present results indicate that even with bottom fish only the northern European designs, particularly the sand-eel trawl, can compete with the Italian-type trawl under Mediterranean fishing conditions. Recommendations for future trawl studies are included.

Progress Achieved by the Non-Self-Governing Territories in Pursuance of Chapter XI of the Charter--Fisheries in the Non-Self-Governing Territories, United Nations General Assembly, 14th Session, 21 pp., processed. Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy, June 23, 1959.

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#### FRESH-WATER FISH:

"Biology of Commercial Fishes in Lakes of Northern Kazakhstan," by V. I. Ereshchenko, article, *Akademiia Nauk Kazakhskoi SSR, Institut Zoolo-gii*, no. 2, 1959, p. 208, printed in Russian. *Akademiia Nauk Kazakhskoi SSR, Institut Zoolo-gii*, Alma-Ata, U. S. S. R.

#### FROZEN FISH:

"A New Technique for the Measurement of Texture Changes in Fish Muscle, and Its Application in Assessing the Quality of Cold-Stored Material," by R. M. Love, article, *Bulletin de L'Institut International du Froid*, vol. 39, 1959, p. 868, printed. International Institute of Refrigeration, 177 Boulevard Malesherbes, Paris 17, France.

"Preliminary Investigations on the Use of Gunny Sack as a Simple and Economical Means for Storing Quick-Frozen Pomfrets with Special Reference to Protection Against Yellow Discoloration During Storage," *Indian Fisheries Bulletin*, vol. 5, no. 1, January 1958, pp. 18-20, printed in English. Ministry of Food and Agriculture, Government of India, New Delhi, India.

#### FUNGI:

Occurrence of Lignicolous Fungi in Northern Atlantic and Pacific Marine Localities, contribution no. 252, by S. P. Myers and E. S. Reynolds, 10 pp., illus., printed. (Reprinted from *Canadian Journal of Botany*, vol. 38, 1960, pp. 217-226.) The Marine Laboratory, University of Miami, No. 1 Rickenbacker Causeway, Miami 49, Fla.

#### FUR SEALS:

"North Pacific Fur Seal Commission Meets in Moscow," article, *Trade News*, vol. 12, no. 8, February 1960, p. 21, processed. Information and Educational Service, Department of Fisheries, Ottawa, Canada.

#### GEAR:

"A New Fishing Method for Increasing the Production of Prime Fish in the Coastal Fishery," by G. Predel, article, *Deutsche Fischerei Zeitung*, vol. 5, no. 7, July 1958, p. 200, printed. *Deutsche Fischerei Zeitung*, Berlin-Friedrichshagen, Muggelseedamm 310, East Berlin, Germany

#### Selectivity of Gill Nets for Lake Whitefish,

COREGONUS CLUPEAFORMIS, by A. M. McCombie and F. E. J. Fry, 9 pp., illus., printed. (Reprinted from *Transaction American Fisheries Society*, vol. 89, no. 2, 1960, pp. 176-184.) Division of Research, Ontario Department of Lands and Forests, Toronto, Ontario, Canada.

"State of Development and Working Conditions of Floating Trawls," by G. Kajewski, article, *Fischereiforschung*, vol. 1, no. 1, August 1958, p. 1, printed in German, *Fischereiforschung*, Institut fur Hochseefischerei und Fischverarbeitung, Rostock-Marienehe, E. Germany.

#### GENERAL:

Fish Saving (A History of Fish Processing from Ancient to Modern Times), by Charles L. Cut-

ting, 385 pp., illus., printed, 42s. (about US\$5.88). Leonard Hill Limited, 9 Eden St., N. W. 1, London, England, 1955. The author of this book, who is trained in the field of fisheries technology, gives a very good account of the "methods evolved by man down through the ages for keeping fish in an edible condition." The contents range from the preservation practices of primitive peoples on through the pre-industrial era, the development of the vast fisheries off Newfoundland, the early history of the fish-canning industry, and on down to the present era. Although the book concentrates on the historical aspects of fish preservation as food, the volume contains many references to the role that salting, drying, and smoking of fishery products played in the development of trade between Europe and the North American colonies. This volume is nontechnical and can be recommended to anyone who wants a background knowledge of a subject for which the material is often scattered and inaccessible. The reference material at the end of each chapter is excellent and besides a general index, is also indexed by species, names, and places.

--H. M. Bearse

#### GERMANY:

Berichte der Deutschen Wissenschaftlichen Kommission fur Meeresforschung, Neue Folge, Band XV, Heft 4, 1959, 121 pp., illus., printed in German with English summaries. *Berichte der Deutschen Wissenschaftlichen Kommission fur Meeresforschung*, E. Schweizerbart'sche Verlagsbuchhandlung (Nagel u. Obermiller), Stuttgart W., Germany. Includes these articles: "Untersuchungen uber die Biologie des Wittlings *Merlangius merlangus* (L.) in der Nordsee" (Biological Research on the Whiting, *Merlangius merlangus* (L.), of the North Sea), by Joachim Messtorff; "Untersuchungen uber den Anteil Untermaassiger Wittlinge in den Fangen der Deutschen Heringsschleppnetzfisherei in der Nordsee" (Investigations of the Share of Under-sized Haddock in the Catches of the Herring Trawl Fishery of the North Sea), by Dietrich Sahrhage; and "Die Vertikalverteilung Planktischer Copepoden in der Kieler Bucht" (Vertical Distribution of Plankton Copepods in the Bay of Kiel), by Karl Banse.

#### HALIBUT:

Pacific Halibut Fishery Regulations (Effective March 24, 1960), 12 pp., printed. International Pacific Halibut Commission Fisheries Hall No. 2, University of Washington, Seattle 5, Wash., March 1960. These regulations were published in conformity with the Pacific Halibut Fishery Convention between the United States and Canada, signed March 2, 1953. They are based on biological and statistical investigations, designed to show what catch can be taken from the stocks each year. The 1960 regulations are similar to those for 1959, except that fishing grounds in the Cape Scott-Goose Islands region and in the channels of southeastern Alaska which were closed to halibut fishing during the second fishing season in Area 2, Willapa Bay to Cape Spencer in 1959, will be open in 1960.

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#### HERRING:

The Herring Fishery of the Northwest Atlantic, by Leslie W. Scattergood and S. N. Tibbo, printed, 75 Canadian cents, The Fisheries Research Board of Canada, Ottawa, Canada. (For sale by the Queen's Printer and Controller of Stationery, Ottawa, Canada.) A general account of the history of the Northwest Atlantic herring fishery from aboriginal days to the present. This booklet also describes the catch and its seasonal nature, gear used, utilization of the catch, and the possibility for expansion.

#### HYDROGRAPHY:

Some Relations Between Air Temperatures and the Surface Water Temperatures of Lakes, by A. M. McCombie, 7 pp., illus., printed. (Reprinted from *Limnology and Oceanography*, vol. 4, no. 3, July 1959, pp. 252-258.) Ontario Department of Lands and Forests, Division of Research, Maple, Ontario, Canada.

#### INDIA:

The Development of a Fisheries Extension Service in India, by Charles B. Wade, 41 pp., processed. Government of India, New Delhi, India, January 1959.

Fisheries of Bombay State, 1957, 32 pp., illus., printed. Department of Fisheries, Government of Bombay, Bombay, India.

"Fishing Methods for the Indian Shad *Hilsa ilisha* (Hamilton) in the Indian Region, Part II," by S. Jones, article, *Journal of the Bombay Natural History Society*, vol. 56, no. 3, December 1959, pp. 423-448, illus., printed, Rs. 15 (about US\$3.15). Bombay Natural History Society 91 Walkeshwar Rd., Bombay 6, India. The methods of fishing for the Indian shad in India, Pakistan, and Burma are described in considerable detail. Some of the nets described are specially designed for landing *Hilsa* while others are multipurpose nets in which this fish is one of several species caught. In all, about 102 nets are classified, with most of the important ones illustrated. A glossary of local names of fishing gear and tackle with explanations is included.

#### JAPAN:

Bulletin of the Hokkaido Regional Fisheries Research Laboratory no. 21, February 1960, 61 pp., illus., printed in Japanese with English summaries. Hokkaido Regional Fisheries Research Laboratory, Yoichi, Hokkaido, Japan. Includes, among others, these articles: "Studies on the Sterilization of Fishmeal and the Improvement of its Quality," by H. Oshima, M. Sasajima, and T. Kanzaki; and "Studies on Freezing of 'Surimi' (Fish Paste) and its Application (II): On Freezing of Alaska Pollack 'Surimi' for the Material of Sausage (I)," by K. Nishiya and others.

Bulletin of Tokai Regional Fisheries Research Laboratory, no. 25, August 1959, 79 pp., illus., printed in Japanese with English Summaries. Tokai Regional Fisheries Research Laboratory, Tuskushima, Chuo-ku, Tokyo, Japan. Contains,

among others, these articles: "On Separation of Natural and Fishing Mortality from Total Mortality by Use of an Analogue Computer," by T. Doi; "Vitamin A in Fish Flesh," by S. Hirao, J. Yamada, and R. Kikuchi; and "Vitamin B Contents of Tissues of Red Salmon (*Oncorhynchus nerka*)," by S. Murayama, M. Yanase, and K. Tabei.

The Tohoku Journal of Agricultural Research, vol. 10, no. 1, March 1959, 156 pp., illus., printed. Tohoku Journal of Agricultural Research, The Faculty of Agriculture, Tohoku University, Sendai, Japan. Includes, among others, the following articles: "The Moisture Distribution in Frozen Meat of Swordfish During Cold Storage," by Y. Tsuchiya and S. Uchimi; and "The Use of Probability Paper for the Graphical Analysis of Percentage Compositions of Chum Salmon with Different Scale Characteristics," by R. Sato.

#### LAKE TROUT:

Homing Behaviour in Spawning Lake Trout, by N. V. Martin, 4 pp., illus., printed. (Reprinted from *The Canadian Fish Culturist*, no. 26, March 1960, pp. 3-6.) The Queen's Printer and Controller of Stationery, Ottawa, Canada, 1960.

#### LAW OF THE SEA CONFERENCE:

2nd United Nations Conference on the Law of the Sea, United Nations, New York, N. Y.

The following processed reports are available from the United Nations, New York, N. Y., distribution limited:

A/CONF. 19/BUR/L. 1., Closing date of the Conference. Note by the Secretariat to the General Committee, 1 p., April 7, 1960

A/CONF. 19/C. 1/L. 2/ (Rev. 1.), Ethiopia, Ghana, Guinea, Indonesia, Iraq, Iran, Jordan, Lebanon, Libya, Mexico, Morocco, Philippines, Saudi Arabia, Sudan, Tunisia, United Arab Republic, Venezuela and Yemen: revised proposal to the Committee of the Whole, agenda item 9(II), 2 pp., April 11, 1960

A/CONF. 19/C. 1/L. 2/Rev. 1/Corr. 1., revised proposal to the Committee of the Whole, Russian only, April 11, 1960.

A/CONF. 19/C. 1/L. 5., Philippines: Amendment to the proposals of the USSR (A/CONF. 19/C.1/L. 1), Mexico (A/CONF. 19/C. 1/L. 2), USA (A/CONF. 19/C. 1/L. 3), and Canada (A/CONF. 19/C. 1/L. 4) to the Committee of the Whole, agenda item 9 (II), 2 pp., April 1, 1960.

A/CONF. 19/C. 1/L. 6., Iran, Indonesia, Philippines, Iraq, Saudi Arabia, Jordan, Lebanon, United Arab Republic, Libya, Tunisia, Morocco, Ghana, Guinea, Sudan, Ethiopia, Yemen: proposal to the Committee of the Whole, agenda item 9 (III), 1 p., April 6, 1960.

A/CONF. 19/C. 1/L. 7., Iceland: proposal to the Committee of the Whole, agenda item 9 (II), 2 pp., April 6, 1960.

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A/CONF. 19/C. 1/L. 7/ Rev. 1/Corr. 1., revised proposal to the Committee of the Whole, 1 p., Russian only, April 12, 1960.

A/CONF. 19/C. 1/L. 8., Peru: proposal to the Committee of the Whole, agenda item 9 (II), 2 pp., April 8, 1960.

A/CONF. 19/C. 1/L. 9., Cuba: proposal to the Committee of the Whole, agenda item 9 (II), 2 pp., April 8, 1960.

A/CONF. 19/C. 1/L. 10., Canada and USA: proposal to the Committee of the Whole, agenda item 9 (II), 1 p., April 8, 1960.

A/CONF. 19/C. 1/L. 12., Guatemala: amendment to the joint Canada-USA proposal (A/CONF. 19/C. 1/L. 10.) to the Committee of the Whole, agenda item 9 (II), 1 p., April 12, 1960.

A/CONF. 19/L. 3., Mexico: draft resolution, 1 p., April 8, 1960.

A/CONF. 19/L. 4., Report of the Committee of the Whole, 8 pp., including annex, April 14, 1960.

A/CONF. 19/L. 4/Corr. 1., 1 p., April 19, 1960.

A/CONF. 19/L. 4/Corr. 2., 1 p., English only April 19, 1960.

A/CONF. 19/L. 5., Peru: proposal, agenda item 9 (II), 2 pp., April 8, 1960.

A/CONF. 19/L. 6., Cuba: proposal, agenda item 9 (II), 2 pp., April 8, 1960.

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A/CONF. 19/5/Add. 1., Addendum to the Supplement to Laws and Regulations on the Regime of the Territorial Sea (UN Legislative Series), Indonesia: Act no. 4 of February 18, 1960, 12 pp., including annex, April 4, 1960.

A/CONF. 19/5/Add. 2., Addendum to the Supplement to Laws and Regulations on the Regime of the Territorial Sea (UN Legislative Series), Netherlands: Netherlands New Guinea, Ordinance of February 17, 1959, amending the Territorial Sea and Maritime Districts Ordinance 1939, 6 pp., April 8, 1960.

A/CONF. 19/6/ Add. 1., 2nd UN Conference on the Law of the Sea, Addendum to the Supplement to the Bibliographical Guide to the Law of the Sea (A/CONF. 13/17), 7 pp., text in English, French, and Spanish, March 28, 1960.

#### MADAGASCAR:

"La Pêche au Pieu ou . . . 'Vovomora' dans les Pangalances-Est" (The Trap Fishery for "Vovomora" on the Eastern Coast of Madagascar), by A. Keiner, article, Bulletin de Madagascar, vol. 10, no. 167, April 1960, pp. 309-314, illus., printed in French. Bulletin de Madagascar, M. le Directeur de l'Imprimerie Officielle, Tananarive, Madagascar.

#### MANAGEMENT AIDS:

Responsibility Accounting Can Pay Dividends, by Martin N. Kellogg, Management Aids for Small Manufacturers No. 142, 4 pp., illus., printed, Small Business Administration, Washington 25, D.C., March 1960. Describes the role of responsibility accounting in the management of small manufacturing plants. "Responsibility Accounting" is a relatively new term but it does represent a well-established accounting concept. It increases management vitality in the financial reporting system of a business by providing separate accounting reports of individual executives' operating performances. Thus the executives' responsibility is more clearly established, too. But perhaps the major benefits from a responsibility accounting system are the profit-and-loss thinking and the exercise of initiative that it brings to a management team. This concept, entailing submission of each executive's budget recommendation as well as his regular operating reports, might also be termed "Responsibility Reporting."

#### MICHIGAN:

Laws Relating to Fishing--1959, 84 pp., printed. Michigan Department of Conservation, Lansing, Mich. Laws pertaining to commercial, inland, and sports fishing in Michigan as well as miscellaneous fishing laws. The section on commercial fishing relates to commercial fishing licenses; special provisions regulating fishing in bays and harbors; fishing regulations for Fort Gratiot Light (Lake Huron), Northport Harbor, and Whaiska Bay; and laws for private fish ponds.

#### MISCELLANEOUS:

Association of Island Marine Laboratories (Second Meeting, September 17-21, 1958), 28 pp., illus., processed. Bermuda Biological Station, Bermuda, B.W.I.

The First Filling of the Swim Bladder in Salmonoids, by J. S. Tait, 10 pp., illus., printed. (Reprinted from Canadian Journal of Zoology, vol. 38, 1960, pp. 179-187.) Laboratory for Experimental Limnology, Department of Zoology, University of Toronto, Toronto, Canada.

A Modified Roller Press for Scale Impressions, by M. H. Baker and H. H. Brohm, 4 pp., illus., printed. (Reprinted from The Canadian Fish Culturist, no. 26, March 1960, pp. 31-34.) The Queen's Printer and Controller of Stationery, Ottawa, Canada.

#### MOLLUSKS:

Marine Mollusca of Point Barrow, Alaska, by Nettie Macginitie, 203 pp., illus., printed. (Reprinted from Proceedings of the United States National Museum, vol. 109, no. 3412, 1959, pp. 59-208.) Smithsonian Institution, United States National Museum, Washington, D. C.

#### NETHERLANDS:

Onderzoek Naar de Bedrijfsresultaten van de Binnenvisserij--Zonder Riviervisserij--in de Seizoenen 1955/56 en 1956/57 (Research on the Accomplishments of Business Units in Inland



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Fisheries--Without River Fisheries--in the Seasons 1955/56 and 1956/57, Report No. 259, 52 pp., illus., processed in Dutch. Landbouweconomisch Instituut, Conradskade 175, The Hague, Netherlands, May 6, 1958.

#### NORWAY:

"Rapport om Fiskeforsøk Etter al i Herøy-Distriktet, Helgeland, Høsten 1959" (Report on Eel Fishery Research in the Herøy District, Helgeland, Fall 1959), by M. Halas, article, *Fiskets Gang*, vol. 46, no. 14, April 7, 1960, pp. 208-210, printed in Norwegian. Fiskets Gang, Postgiro nr. 691 81, Bergen, Norway.

"Rapport over Fiskeforsøk og Merkeeksperimententer på Makrell, Piggha, og Habrann i Nordsjøen og Omradene Vest av Hebridenes-Shetland med F/S G. O. Sars, 5-26/11-59" (Report on Fishery Research and Tagging Experiments on Mackerel and Sharks in North Sea and West of Hebrides-Shetlands on Cruise of G. O. Sars, November 5-26, 1959), article, *Fiskets Gang*, vol. 46, no. 13, March 31, 1960, pp. 193-195, illus., printed in Norwegian. Fiskets Gang, Postgiro nr. 691 81, Bergen, Norway.

"Rapport over Sildeinnsiget 1960" (Report on Herring Outlook for 1960), by Finn Devold, article, *Fiskets Gang*, vol. 46, no. 16, April 21, 1960, pp. 232-236, illus., printed in Norwegian. Fiskets Gang, Postgiro nr. 619 81, Bergen, Norway.

"Smatralernes Lønnsomhet i 1958" (Small Trawler Earnings in 1958), by Arthur Holm, article, *Fiskets Gang*, vol. 46, no. 17, April 28, 1960, pp. 244-250, printed in Norwegian. Fiskets Gang, Postgiro nr. 691 81, Bergen, Norway.

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of Japanese extraction. The commercial shrimp are fished at moderate depths, ranging from 15 to 70 fathoms. There are two methods of trawling used in the shrimp fishery--otter trawling and beam trawling. However, on the majority of shrimp boats, operated on a one-man basis, the more easily handled beam trawl is preferred by the fishermen.

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### FIVE-FOOT SARDINE SANDWICH AT NATIONAL BOY SCOUT JAMBOREE

A gigantic Maine sardine sandwich designed to provide a meal for 77 persons was a highlight of the National Boy Scout Jamboree, Colorado Springs, Colo. The colorful seafood spectacular was concocted by Troop 72 of the Maine Pine Tree Council as its project in the week-long Skill-O-Rama which is a feature of the 60,000-boy encampment.

Troops from all sections of the country vie for honors as they perform feats of science, art, cookery, and other activities.

The sandwich was assembled as a three-decker with a five-foot loaf of bread made by a Portland, Maine, baking firm and shipped by air to the site. The filling consisted of mustard butter on the bread, chopped lettuce, sliced green peppers, sliced tomatoes and raw onions, and whole sardines. It was originated by the Maine Sardine Council's home economist.

The sandwich was quickly eaten by 75 scouts and visiting onlookers.

Editorial Assistant--Ruth V. Keefe

Illustrator--Gustaf T. Sundstrom

Compositors--Jean Zalevsky, Alma Greene, and Vera Eggleston

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NATIONAL FISH 'n SEAFOOD PARADE--OCTOBER 17-23, 1960

The Fishing Industry and the U. S. Bureau of Commercial Fisheries are working together to encourage the greater use of fish and shellfish products during the "Fish 'n Seafood Parade"--October 17-23, 1960. This is the Fishing Industry's sixth annual all-out promotion channeled over radio, television, newspapers, and magazines. All types of fresh, frozen, canned, smoked, precooked, and cured fishery products and fish dinners are being advertised. Many retail stores and restaurants are making a concerted effort to display and stock the many varieties of fishery products available.

Preparations for the Seafood Parade began gathering momentum in June 1960 when the Fish 'n Seafood Parade National Committee made a broadside mailing of 4,500 brochures to chain stores, distributors, and other segments of the industry. Also, the Committee unveiled an in-store advertising kit in color based on an 8-foot mobile, the top section of which has been redesigned especially for this year's Parade. Included are diecut paper posters duplicating elements in the mobile as well as a decorative set of cutouts designed for use on store windows, display cases, and similar locations.

U. S. Bureau of Commercial Fisheries field men are helping to obtain newspaper, radio, and television publicity, and are cooperating in many other ways. A special marketing bulletin has been distributed to food editors and home economists. Fact sheets with recipes have been released to restaurants, institutions, and schools. Also Bureau field men and home economists are available for radio and television appearances.

Here is an opportunity for every segment of the fishing and allied industries to unite in one big appeal to the consumer. Children are back in school; vacations are over; fishery products are more plentiful than at any other time of the year; and prices are at attractive levels.

Timmy Tar says:

"Get ready to haul in the catch, mate!"



OCTOBER 17-23 is  
**Fish 'n Seafood  
Parade**

NATIONAL COMMITTEE, FISH 'n SEAFOOD PARADE  
1815 GOND STREET, N.W., WASHINGTON 9, D.C.



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